

MARKED-UP VERSION OF SPECIFICATIONFOR APPLICATION NO. 10/582,327

## DESCRIPTION

## PROBE SET AND METHOD FOR IDENTIFYING HLA ALLELE

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## TECHNICAL FIELD

The present invention relates to a probe set and a method for identifying an allele of human HLA.

## 10 BACKGROUND ART

Human leukocyte antigen (HLA) is known to include multiple HLA types, such as HLA-A, HLA-B, HLA-C, HLA-DP, HLA-DQ, HLA-DR, and HLA-MICA. An HLA allele is designated with a four or more digit number 15 by the WHO HLA Nomenclature Committee. The principle of the nomenclature is that the first two digits correspond to the serotypes; the third and fourth digits distinguish the alleles of different amino acid sequences (subtypes); and the fifth digit 20 distinguishes the alleles of different base sequences but encoding the same amino acid sequence. Typing of these alleles has been conventionally conducted at the serological level. Although this serological method does not require special sample processing, 25 and enables easy typing using antigen-antibody reaction, the serotypes are the roughest classification corresponding to the first two digits

of the numbers according to the nomenclature described above.

Many of other commercially available kits of the type associated with genomic extraction do not  
5 have enough accuracy to identify each allele individually. It is the current state that such a kit distinguishes multiple alleles as a group. Moreover, even a kit based on the SBT (Sequencing Based Typing) method, which enables the most detailed  
10 polymorphic analysis, often fails to solve the problem of ambiguity by one analysis since most samples are heterozygotes requiring reexamination. Such problematic alleles are listed collectively in <http://www.ihwg.org/protocols/sbt/ambiguities2.pdf> by  
15 the International Histocompatibility Working Group (IHWG).

#### DISCLOSURE OF INVENTION

On the other hand, with the development of  
20 advanced medical treatment in recent years, detailed HLA typing is required in organ transplantation, etc. In addition, associations of HLA with diabetes, cancer, and other multifactorial diseases have been suggested. With such a background, a test method is  
25 desired that can identify each allele individually. Upon such demands it is an object of the present invention to provide a probe set that is useful for

identifying each allele of HLA individually, and a method for identification of an HLA allele by the use thereof.

A probe set for identifying an allele of HLA  
5 according to the present invention is a probe set comprising multiple probes that can be used for identifying HLA allele contained in a specimen, characterized in that each of the multiple probes comprises a partial sequence containing a base  
10 represented by a capital letter in a sequence of each allele in an allele list in the description.

An embodiment of the present invention is a probe set comprising multiple probes that can be used for identification of an HLA-A allele in a specimen,  
15 characterized in that each of the multiple probes comprises a partial sequence containing a base represented by a capital letter in a sequence of each allele in an allele list in the description.

Another embodiment of the present invention is  
20 a method for identification of an HLA-A allele contained in a specimen using a probe set, characterized in that the probe set is the probe set described above.

Another embodiment of the present invention is  
25 a probe set comprising multiple probes that can be used for identification of an HLA-B allele in a specimen, characterized in that each of the multiple

probes comprises a partial sequence containing a base represented by a capital letter in a sequence of each allele in an allele list in the description.

Another embodiment of the present invention is  
5 a method for identification of an HLA-B allele contained in a specimen using a probe set, characterized in that the probe set is the probe set described above.

Another embodiment of the present invention is  
10 a probe set comprising multiple probes that can be used for identification of an HLA-C allele in a specimen, characterized in that each of the multiple probes comprises a partial sequence containing a base represented by a capital letter in a sequence of each  
15 allele in an allele list in the description.

Another embodiment of the present invention is  
a method for identification of an HLA-C allele contained in a specimen using a probe set, characterized in that the probe set is the probe set  
20 described above.

Another embodiment of the present invention is  
a probe set comprising multiple probes that can be used for identification of an HLA-DP allele in a specimen, characterized in that each of the multiple  
25 probes comprises a partial sequence including a base represented by a capital letter in the sequence of each allele in the allele list in the description.

Another embodiment of the present invention is a method for identification of an HLA-DP allele contained in a specimen using a probe set, characterized in that the probe set is the probe set 5 described above. Another embodiment according to the present invention is a probe set for identification of an HLA-DQ allele that is a probe set comprising multiple probes that can be used for identification 10 of an HLA-DQ allele in a specimen, characterized in that each of the multiple probes comprises a partial sequence containing a base represented by a capital letter in a sequence of each allele in an allele list 15 in the description.

Another embodiment of the present invention is 15 a probe set comprising multiple probes that can be used for identification of an HLA-DQ allele in a specimen, characterized in that each of the multiple probes comprises a partial sequence containing a base represented by a capital letter in a sequence of each 20 allele in an allele list in the description.

Another embodiment of the present invention is a method for identification of an HLA-DQ allele contained in a specimen using a probe set, characterized in that the probe set is the probe set 25 described above.

Another embodiment of the present invention is a probe set comprising multiple probes that can be

used for identification of an HLA-DR allele in a specimen, characterized in that each of the multiple probes comprises a partial sequence containing a base represented by a capital letter in a sequence of each 5 allele in an allele list in the description.

Another embodiment of the present invention is a method for identification of an HLA-DR allele contained in a specimen using a probe set, characterized in that the probe set is the probe set 10 described above.

Another embodiment of the present invention is a probe set comprising multiple probes that can be used for identification of an HLA-MICA allele in a specimen, characterized in that each of the multiple 15 probes comprises a partial sequence containing a base represented by a capital letter in a sequence of each allele in an allele list in the description.

Another embodiment of the present invention is a method for identification of an HLA-MICA allele contained in a specimen using a probe set, characterized in that the probe set is the probe set 20 described above.

The probe set according to the present invention, and identification of an allele of each 25 HLA type by the use thereof can contribute to diathesis diagnoses and tailor-made medicines, which are required in organ transplantation, cancer,

diabetes, and other multifactorial diseases.

Other features and advantages of the present invention will be apparent from the following description.

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#### BEST MODE FOR CARRYING OUT THE INVENTION

Preferred embodiments of the present invention will now be described in detail. Each probe that constitutes the probe set of the present invention 10 has a partial sequence including a base represented by a capital letter in each allele sequence in the allele lists described later. Preferably, segments consisting of 10 to 30 bases including a base represented by a capital letter are selected from 15 each allele sequence, and the probe set is composed of probes having the obtained partial base sequences respectively. As specific examples, the following compositions can be employed:

- 1) A probe set for HLA-A allele identification 20 consisting of respective probes listed in one of the probe list A1 shown in Tables 1-1 to 1-7 and the probe list A2 shown in Tables 2-1 to 2-6 shown later;
- 2) A probe set for HLA-B allele identification 25 consisting of probes listed in one of the probe list B1 shown in Tables 5-1 to 5-9 and the probe list B2 shown in Tables 6-1 to 6-8 shown later;
- 3) A probe set for HLA-C allele identification

consisting of probes listed in one of the probe list C1 shown in Tables 9 and the probe list C2 shown in Table 10 shown later;

4) A probe set for HLA-DP allele identification  
5 consisting of probes listed in one of the probe lists DP1-DP4 shown in Tables 13-1 to 16-5 respectively as shown later;

5) A probe set for HLA-DQ allele identification  
consisting of probes listed in one of the probe lists  
10 DQ1 to DQ 4 shown in Tables 17A, 17B-1, 17B-2, 18A,  
18B-1 and 18B-2 respectively as shown later;

6) A probe set for HLA-DR allele identification  
consisting of probes listed in one of the probe lists DR1 and DR2 shown in Tables 21-1 to 21-8 and Tables  
15 22-1 to 22-7 respectively, as shown later; and

7) A probe set for HLA-MICA allele  
identification consisting of probes listed in one of  
the probe lists MICA1 and MICA2 shown in Tables 25-  
1, 25-2 and Tables 26-1 to 26-2 respectively, as  
20 shown later.

For example, the No.0 probe in the probe list A1 has a 16-base sequence of "gccccgcttcatcgC", which is a segment containing the first capital lettered base C in A\*010101, and the No.0 probe in  
25 the probe list 2 has an 18-base sequence of "cttccatcgCgtgggcta", which is a segment also containing the first capital lettered base C in the

same allele.

In the allele list, each allele is assigned with a unique number such as "A\*xxxx" in accordance with "allele nomenclature" by Japanese Society for  
5 Histocompatibility and Immunogenetics, HLA Standardization Committee.

To identify an allele using a probe set according to the present invention, two methods are possible: one is detection by hybridization; and the  
10 other is direct detection by PCR without hybridization. In either method, each probe is an oligonucleotide of preferably more than 10 and less than 30 nucleotides in length and designed to include the base represented by a capital letter, i.e., a  
15 base specific for the allele to be identified.

Moreover, the probe arrays provided in the present invention present groups of varied bases for identification of each allele individually by positions chosen for the probes. As a method for  
20 detection of such a varied base, the detection method by hybridization, and the method of direct detection by PCR without hybridization can also be preferably used. Also in these cases, the probes are designed as oligonucleotides of preferably more than 10 and  
25 less than 30 nucleotides in length each containing a base represented by a capital letter.

When a variation is detected by hybridization,

probes are preferably designed to have a variant base represented by a capital letter near the center of the probes, which makes Tm difference between full-matched and mismatched pairs larger, enabling easier  
5 separation of them by adjusting the reaction temperature of hybridization.

On the other hand, when the variation is directly detected by PCR, the variant base is rather placed near the 3' end so that enzymatic recognition  
10 and elongation of annealed double strands will not occur. Also, some variation methods are possible, such as a method placing a variant base at the second from the 3' end an artificial variant base at the third from the 3' end as with Allele Specific Primer  
15 (Toyobo Co., Ltd.); a method circularizing probes by ligation with a mismatch placed near the 3' end (Amersham Biosciences Co., Ltd.); TaqMan-MGB (ABI Co.); and 3'-end mismatch using LNA (Proligo Japan Co., Ltd.).

20 For example, a segment including the fourth capital letter of A\*2302 is "ggagcagTggagagC", and the corresponding segment of A\*2303 of the same serotype is "ggagcagtTgagagc", differing at the ninth base. By using a probe with a sequence of one of  
25 these segments, one can be distinguished from the other by mismatching.

## [EXAMPLES]

The present invention will be described further by way of examples in the following. ~~The SEQ ID NOS of the sequences in Examples are in the following relation:~~

- 5 ~~Examples 1 and 2: Sequence Listing A~~
- 10 ~~Examples 3 and 4: Sequence Listing B~~
- ~~Examples 5 and 6: Sequence Listing C~~
- ~~Examples 7 and 8: Sequence Listing DP~~
- 15 ~~Examples 9 and 10: Sequence Listing DQ~~
- ~~Examples 11 and 12: Sequence Listing DR~~
- ~~Examples 13 and 14: Sequence Listing MICA.~~

## (Example 1)

- 15 Probes for identification of HLA-A allele

Extraction of DNA from 1 ml of human blood was performed using GFX Genomic Blood DNA Purification Kit from Amersham Biosciences. The protocol is as follows:

- 20 Blood 1 ml →  
Add RBC Lysis Solution [hemolysate] →  
Mix gently at room temperature for 5 minutes →  
Centrifuge at 12,000-16,000 × g for 20 seconds →  
Discard the supernatant leaving 20-50 µl →  
25 Resuspend the precipitation →  
Add Extraction Solution and vortex vigorously →  
Stand at room temperature for 5 minutes [extraction

of DNA] →

Set a GFX Column in a Collection Tube →

Heat the elusion buffer to 70°C →

Add the sample →

5 Centrifuge at 5,000 × g for 1 minute (binding of DNA)  
→

Add Extraction Solution (washing) →

Centrifuge at 5,000 × g for 1 minute →

Add Washing Solution (washing) →

10 Centrifuge at 12,000 × g for 3 minutes →

Set a GFX Column in a centrifugal tube →

Eluate with pure water →

Stand at room temperature for 1 minute →

Centrifuge at 5,000–8,000 × g for 1 minute →

15 Concentrate to 230 µl ... ... solution (1).

Next, quantitative PCR was carried out using QuantiTect SYBR Green PCR Kit from QIAGEN and GeneAmp5700 from ABI. The reaction composition and  
20 the protocol are shown below.

1) Reaction composition/well (96 well microplate)

QuantiTect SYBR Green 2 × premix: 10 µl

Solution (1): 1 µl

Solution of one of the probes in the probe list

25 A1(10 pmol/µl): 1 µl

Mixed primers (10 pmol/µl)\*: 3 µl

Ultra pure water: 5 µl

(Total: 20  $\mu$ l)

\*consisting of 1  $\mu$ l each of the solutions respectively containing probes of the following sequences at 10 pmol/ $\mu$ l:

5 CCCATCTCAGGGTGAGGGGCT (SEQ ID NO: 632)

GCGCTGCAGCGTCTCCTTCC (SEQ ID NO: 633)

GCCCAGGTCTGGGTCAAGGCCAG (SEQ ID NO: 634)

2) PCR program

94°C: 180 sec followed by 30 cycles of [94°C: 10  
10 sec → 66°C: 10 sec → 72°C: 20 sec.].

Referring to Amp Plot and Dissociation curves on a display of 5700 software, and to the allele-probe correspondence list A1 (Tables 3-1 to 3-9), it was identified as A\*2402101.

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(Example 2)

Extraction of DNA from 1 ml of human blood was performed in the same manner as in Example 1. PCR of human HLA-A was then performed using ABI 9700 PCR  
20 Instrument and Ex Taq from Takara Bio Inc. The reaction composition and the protocol are as follows:

1) Reaction composition/tube

Ex Taq 2 × premix: 20  $\mu$ l

Solution (1): 3  $\mu$ l

25 Cy-3 dUTP (1 mM): 2  $\mu$ l

Mix primer (10 pmol/ $\mu$ l)\*: 3  $\mu$ l

Ultra pure water: 12  $\mu$ l

(Total: 40  $\mu$ l)

\*consisting 1  $\mu$ l each of the solutions  
respectively containing probes of the following  
sequences at 10 pmol/ $\mu$ l:

5 ATGGCTCCCCGAACCCTC (SEQ ID NO: 635)  
ATGGCGCCCCGAACCCTC (SEQ ID NO: 636)  
CATCTCAGGGTGAGGGGCT (SEQ ID NO: 637)

2) PCR program

94°C: 180 sec followed by 30 cycles of [94°C: 10  
10 sec → 66°C: 10 sec → 72°C: 20 sec]

After the completion of the reaction, unreacted  
dNTPs, etc., were removed using a purification column  
(QIAGEN QIAquick PCR Purification Kit) to obtain a  
sample.

15 At the same time, a DNA microarray was prepared  
to identify the allele in the specimen described  
above. The method for the preparation was in  
accordance with examples in Japanese Patent  
Application Laid-Open No. H11-187900. SH group was  
20 used as the functional group for immobilization. A  
glass substrate was treated by a silane-coupling  
agent to bind the SH group of the probes via a  
divalent reagent EMCS (N-(6-  
maleimidocaproyloxy)succinimide). Each probe in the  
25 probe list A2 was used for each dot.

The DNA microarray was blocked in advance with  
PBS supplemented with 1 wt% of BSA (bovine serum

albumin) for two hours. The sample was adjusted to have a salt concentration equal to that of the PBS, and to contain 0.1 wt% of SDS (sodium dodecyl sulfate) and 25% of formamide.

5        Then, hybridization was performed using the above sample (PCR product) and the prepared DNA microarray. 50  $\mu$ l of the sample was reacted with the blocked DNA microarray at 60 °C for 2 hours. Unreacted substances were washed off by washing three  
10 times with 2 × SSC solution (NaCl 300 mM, Sodium Citrate (trisodium citrate dihydrate, C<sub>6</sub>H<sub>5</sub>Na<sub>3</sub> · 2H<sub>2</sub>O) 30 mM, pH 7.0), followed by washing twice with 0.1 × SSC solution. The DNA microarray was air-dried and the fluorometry measurement was conducted using  
15 GenePix4000B made by Axon. Referring to the allele-probe list A2 (Tables 4-1 to 4-9), the sample was identified as A\*2402101.

A\*010101 :

atggccgtcatggcgccccgaaccctcctcgtactctcggggcccctggccctgaccagacactggcggcgt  
20 cccactccatgaggattttcttccatccgtgtcccgccggccgcgggagcccccgttcatcgccgtggct  
cgtggacgacacgcagttcgtcggttcgacagcgacgcgcgcgagccagaagatggagccgcggccgcgtggata  
gagcaggaggggccggagtattggaccaggagacacggaatAtgaaggcccactcacagactgaccgagcgaacc  
tgcccgtcgccggctactacaaccagagcgaggacgggtctcacaccatccagataatgtatggctgcgacgt  
ggggccggacggcgttcccgccgggtaccggcaggacgcctacgacggcaaggattacatcgccctgaacgag  
25 gacctgcgtttggaccggcggacatggcagctcagatccaagcgaagtggaggcggccatgcggcgg  
agcagcggagagTctaccctggaggcCGgtgcgtggacggcgtccgcagatacctggagaacgggaaggagacgt  
gcagcgcacggaccggaccggaccatgcggcaccatctgtggccatgcggcgg

gccctgGgcttctaccctgcggagatcacactgacactggcagcggatggggaggaccagacccaggacacggagc  
 tcgtggagaccaggcctgcagggatggaacctccagaagtggcggctgtgggtGcctctggaGaggagca  
 gagatacacctgccatgtcagcatgagggtctgccaagcccctcaccctgagatgggag (SEQ ID  
 NO:1) ;

5 A\*010102 :

gctcccaactccatgaggtattttcacatccgtgtcccgccccggccggggagccccgcttcatcgccgtgg  
 ctacgtggacgacacgcagttcgtcggttcgacagcgacgcccgcgagccagaagatggagccgccccgccccgtgg  
 atagagcaggagggccggagtattggaccaggagacacggaatatgaaggcccactcacagactgaccgagcga  
 acctggggaccctgcgcccgtactacaaccagagcggacggacgggtctcacaccatccagataatgtatggctgcga  
 10 cgtggggccggacggcgcttcctccgcgggtaccggcaggacgcctacgacggcaaggattacatcgccctgaac  
 gaggacctgcgtcttgaccgcggcggacatggcagtcagatTaccaagcgcaagtggaggccgtccatgcgg  
 cgagcagcggagagtctacctggaggccgggtgcgtggacggctccgcagataacctggagaacgggaaggagac  
 gctgcagcgcacgg (SEQ ID NO: 2) ;

A\*0102 :

15 atggccgtcatggcgccccgaaccctccctgtactctcggggcccgtggccctgacccagacctggccggct  
 cccactccatgaggtatttctccatccgtgtcccgccccggcagtggAgagccccgcttcatgcagtggcta  
 cgtggacgacacgcagttcgtcggttcgacagcgacgcccgcgagccagaagatggagccgccccggccgtggata  
 gagcaggagggccggagtattggaccaggagacacggaatatgaaggcccactcacagactgaccgagcgaacc  
 tggggaccctgcgcccgtactacaaccagagcggacggacgggtctcacaccatccagataatgtatggctgcacgt  
 20 ggggcggacggcgcttcctccgcgggtaccggcaggacgcctacgacggcaaggattacatcgccctgaacag  
 gacctgcgtcttgaccgcggcggacatggcagtcagatcaccaagcgcaagtggaggccgtccatgcggcgg  
 agcagcggagagtctacctggaggccgggtgcgtggacggctccgcagataacctggagaacgggaaggagacgt  
 gcagcgcacggaccccccacatgaccaccacccatctctgaccatgaggccaccctgaggtgctgg  
 gccctggcttctaccctgcggagatcacactgacactggcagcggatggggaggaccagacccaggacacggagc  
 25 tcgtggagaccaggcctgcagggatggaacctccagaagtggcggctgtgggtgcctctggagaggagca  
 gagatacacctgccatgtcagcatgagggtctgccaagcccctcaccctgagatgggag (SEQ ID NO: 3)

A\*0103 :

gctcccactccatgaggtaattttcacatccgtgtccccggccggggagccccgcttcatcgccgtgg  
 ctacgtggacacacgcagttcgtgcggttcgacagcgacgccgcgagccagaagatggagccgcggccgtgg  
 atagagcaggagggccggagtattggaccaggagacacggaatatgaaggcccactcacagactgaccgagcga  
 acctggggaccctgcgcggctactacaaccagagcgaggacggttctcacaccatccagatGatgtatggctgcga  
 5 cgtggggccggacgggcgttcctccgcgggtaccggcaggacgcctacgcggcaaggattacatcgccctgaac  
 gaggacctgcgtcttgaccgcggacatggcagtcagatcaccaagcgcaagtggaggccgtccatgcgg  
 cggagcagcggagagtcacctggaggccgggtgcgtggacggctccgcagataacctggagaacggaaaggagac  
 gctgcagcgcacgg (SEQ ID NO: 4) ;  
 A\*0106 :  
 10 gctcccactccatgaggtaattttcacatccgtgtccccggccggggagccccgcttcatcgccgtgg  
 ctacgtggacacacgcagttcgtgcggttcgacagcgacgccgcgagccagaagatggagccgcggccgtgg  
 atagagcaggagggccggagtattggaccaggagacacggaatatgaaggcccactcacagactgaccgagcga  
 acctggggaccctgcgcggctactacaaccagagcgaggacggttctcacaccatccagataatgtatggctgcga  
 cgtggggccggacggcgttcctccgcgggtaccggcaggacgcctacgcggcaaggattacatcgccctgaac  
 15 gaggacctgcgtcttgaccgcggacatggcagtcagatcaccaagcgcaagtggaggccgtccatgcgg  
 cggagcagTTgagagcctacctggaggccgggtgcgtggacggctccgcagataacctggagaacggaaaggagac  
 gctgcagcgcacgg (SEQ ID NO:5) ;  
 A\*0107 :  
 gctcccactccatgaggtaattttcacatccgtgtccccggccggggagccccgcttcatcgccgtgg  
 20 ctacgtggacacacgcagttcgtgcggttcgacagcgacgccgcgagccagaagatggagccgcggccgtgg  
 atagagcaggagggccTgagtattggaccaggagacacggaatgtgaaggcccactcacagactgaccgagAga  
 acctggggaccctgcgcggctactacaaccagagcgaggCcggtctcacaccatccagataatgtatggctgcga  
 cgtggggccggacggcgttcctccgcgggtaccggcaggacgcctacgcggcaaggattacatcgccctgaac  
 gaggacctgcgtcttgaccgcggacatggcagtcagatcaccaagcgcaagtggaggccgtccatgcgg  
 25 cggagcagcggagagtcacctggaggccgggtgcgtggacggctccgcagataacctggagaacggaaaggagac  
 gctgcagcgcacgg (SEQ ID NO: 6) ;  
 A\*0108 :

gctcccactccatgaggtaggtattttcacatccgtgtcccgccccggccggggagccccgcttcatgccgtgg  
 ctacgtggacacacgcagttcgtgcggttcgacagcgacgcgcgagccagaagatggagccgcggccgtgg  
 atagagcaggagggccggagtattggaccaggagacacggaatatgaaggcccactcacagactgaccgagcga  
 acctggggaccctgcgcggctactacaaccagagcgaggacggttctcacaccatccagataatgtatggctgcga  
 5 cgtggggccggacggcgcgttcctccgcgggtaccggcaggacgcctacgcggcaaggattacatgcgcctgaac  
 gaggacctgcgtcttgaccgcggcggacatggcagctcagatccaagcgcaagtggaggcggccatgcgg  
 cggaggcaggagactacactggaggcTggtcgtggacggctccgcagataacctggagaacggaaaggagac  
 gctgcagcgcacgg (SEQ ID NO: 7) ;  
 A\*0109 :  
 10 atggccgtcatggcgccccgaaccctccctgtactctcgccccctggccctgaccagacctggcgggct  
 cccactccatgaggtagttttcacatccgtgtcccgccccggccggggagccccgcttcatgccgtggcta  
 cgtggacacacgcagttAgtgcggttcgacagcgacgcgcgagccagaagatggagccgcggccgtggata  
 gagcaggagggccggagtattggaccaggagacacggaatatgaaggcccactcacagactgaccgagcgaacc  
 tggggaccctgcgcggctactacaaccagagcgaggacggttctcacaccatccagataatgtatggctgcacgt  
 15 ggggcoggacggcgcgttcctccgcgggtaccggcaggacgcctacgcggcaaggattacatgcgcctgaacgag  
 gacctgcgtcttgaccgcggcggacatggcagctcagatccaagcgcaagtggaggcggccatgcggcgg  
 agcaggcggagactacactggaggccgggtgcgtggacggctccgcagataacctggagaacggaaaggagacgct  
 gcagcgcacggacccccccaaagacacatataccaccacccatctgtaccatgaggccaccctgagggtgctgg  
 gcccctggcttctaccctgcggagatcacactgacctggcagcggatggggaggaccagacccaggacacggagc  
 20 tcgtggagaccaggcctgcagggatggaaccttcagaagtggcggctgtggggcttctggagaggag (SEQ ID NO:  
     8) ;  
 A\*020101 :  
 atggccgtcatggcgccccgaaccctccgtccctgtactctcgccccTctggccctgaccagacctggcgggct  
 25 ctcactccatgaggtagttttcacatccgtgtcccgccccggccggggagccccgcttcatgcagtggtggcta  
 cgtggacacacgcagttcgtgcggttcgacagcgacgcgcgagccagaggatggagccgcggccgtggata  
 gagcaggagggtccggagtattggacggggagacacggaaAgtgaaggcccactcacagactCaccgagtggacc

tggggaccctgcgcccactacaaccagaggcgaggccgttctcacaccGtccagaGgatgtatggctgcgacgt  
 ggggtcggacTggcgttccctccgcgggtaccaccagtacgcctacgacggcaaggattacatgcgcctgaaagag  
 gacctgcgtttggaccgcggcggacatggcagtcagaccacaaggcacaagtggaggcggccatgTggcgg  
 agcagtTgagagcctacctggaggcaCgtgcgtggagtggctccgcagatacctggagaacggaaaggagacgt  
 5 gcagcgcacggacgcggccaaaacgcataactcaccacgctgtctgaccatgaagccaccctgaggtgctgg  
 gccctgagcttctaccctgcggagatcacactgacctggcagcggatggggaggaccagaccacggacacggagc  
 tcgtggagaccaggcctgcagggatggAACCTCCAGAAGTGGCGGTGTTGCCTCTGGACAGGGAGCA  
 gagatacacctgccatgtgcagcatgagggtTtgcccaagccctcaccctgagatggag (SEQ ID NO:  
 9) ;  
 10 A\*020102 :  
 gctccactccatgaggtaattttcacatccgtgtcccgccccggccggggagccccgttcatcgAGtgg  
 ctacgtggacgcacgcagttcggttcgcacagcgacgcgcgcgagccagaggatggagccgcggccgtgg  
 atagagcaggagggtccggagtattggacgGggagacacggAAgtgaaggcccactcacagactGaccgagtgg  
 acctggggaccctgcggctactacaaccagaggcgaggccgttctcacaccGtccagaGgatgtatggctgcga  
 15 cgtgggtcggacTggcgttccctccgcgggtaccaCagTacgcctacgacggcaaggattacatgcgcctgaaA  
 gagggacctgcgtttggaccgcggcggacatggcagtcagaCaccaaggcacaagtggaggcggccatgTgg  
 cgagcagtTgagagcctacctggaggcaCgtgcgtggagTggctccgcagatacctggagaacggaaaggagac  
 gctgcagcgcacgg (SEQ ID NO: 10) ;  
 A\*020103 :  
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 A\*0236 :  
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A\*0238 :

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15 A\*0239 :

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A\*0240 :

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15 A\*0242 :

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A\*0244 :

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A\*0245 :

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15 A\*0246 :

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25 A\*0247 :

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A\*0249 :

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25 A\*0250 :

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A\*0251 :

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A\*0252 :

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25 A\*0254 :

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A\*0255 :

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A\*0256 :

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 cgtggacgacacgcagttcgtgcgggttcgacagcgacgcccggagggatggagccggccgcgtggata  
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 25 gcagcgcacggacccccaaaacgcataactcaccacgtgtctgaccatgaagccaccctgaggtgctgg  
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A\*0257 :

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A\*0258 :

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25 A\*0259 :

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A\*1103

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A\*2413 :

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A\*2414 :

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A\*2415 :

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A\*2417 :

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A\*2418 :

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A\*2438 :

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15 A\*2501 :

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 tgggaccggaacacacggaatgtgaaggcccaGtcacagactgaccgagtgaccctggggaccctgcgcggctact  
 10 acaaccagagcgcaggccggttctcacaccatccagatgatgtatggctgcgacgtgggtcggacggcgccttcct  
 ccgcgggtaccggcaggacgcctacgcggcaaggattacatgcgcctgaaagaggacactgcgcgtttggaccgc  
 gcggacatggcagctcagatcaccaagcacaagtggaggcggccatgtggcggagcagTggagagcctacctgg  
 agggcacgtgcgtggagtggctccgcagatacctggagaacgggaag (SEQ ID NO:229) ;

A\*6813 :

15 atggccgtcatggcccccaaccctcgctactctcgccccctggccctgaccagacctggcggct  
 cccactccatgaggtatttctacacGtccgtgtccggccggccggggagcccccgttcatcgccgtggcta  
 cgtggacgacacgcagttcgtgcgggttcgcacagcgcacgcgcgcgagccagaggatggagccgcggccgtggata  
 gagcaggagggccggagtattggaccggagacacggaatgtgaaggcccaGtcacagactgaccgagtgacc  
 tggggaccctgcgcggctactacaaccagagcgcaggccggttctcacaccatccagatgatgtatggctgcgacgt  
 20 ggggToggacggcgcttcctcccggtaccggcaggacgcctacgcggcaaggattacatgcgcctgaaagag  
 gacctgcgtttggaccgcggcggacatggcagctcagaccacaaggcacaagtggaggcggccatgtggcgg  
 agcagTggagagcctacctggaggcagtgctggagtggctccgcagatacctggagaacgggaaggagacgt  
 gcagcgcacggacgcggccaaaacgcataatgactcaccacgcgtctgaccatgaagccaccctgagggtctgg  
 gccctgagttctaccctgcggagatcacactgacccctggcagcggatggggaggaccagacccaggacacggagc  
 25 tcgtggagaccaggcctgcagggatggAACCTCCAGAAGTGGTggctgtggccttcggacaggagca  
 gagatacacctgccatgtcagcatgagg (SEQ ID NO:230) ;

A\*6814 :

gctcccactccatgaggtatttacacCtcgtgtccggccggcgggagccccgcttcatgccgtgg  
 ctacgtggacacacgcagttcggttcgcacagcgacgcgcgagccagaggatggagccggccgtgg  
 atagagcaggagggccggagtattggacGaggagacacggaatgtgaaggccaGtcacagactgaccgagtgg  
 acctgggaccctgcgcggctactacaaccagagcgaggccgttctcacaccatccagatgtatggctgcga  
 5 cgtggggTcgacggcgcttcctccgcgggtaccggcaggacgcctacgcggcaaggattacatgccctgaaa  
 gaggacctgcgtcttgaccgcggacatggcagctcagaccaccaagaatggaggccatgTgg  
 cggagcagTggagagcctacctggagggcaCgtgcgtggagTggctccgcagatacctggagaacgggaaggagac  
 gctgcagcgcgcgg (SEQ ID NO:231) ;  
**A\*6815 :**  
 10 gctcccactccatgaggtatttacacccAtgtccggccggcgggagccccgcttcatgccgtgg  
 ctacgtggacacacgcagttcggttcgcacagcgacgcgcgagccagaggatggagccggccgtgg  
 atagagcaggagggccggagtattggaccggaaCacacggaatgtgaaggccactcacagactCaccgagtgg  
 acctgggaccctgcgcggctactacaaccagagcgaggccgttctcacaccatccagaggatgtatggctgcga  
 cgtggggccggacggcgcttcctccgcgggtaccaccagtcgcctacgcggcaaggattacatgccctgaaa  
 15 gaggacctgcgtcttgaccgcggacatggcagctcagaccaccaagaatggaggccatgtgg  
 cggagcagTggagagcctacctggagggcacgtgcgtggagtggctccgcagatacctggagaacgggaaggagac  
 gctgcagcgcacgg (SEQ ID NO:232) ;  
**A\*6816 :**  
 ccgtcatggcgccccgaaccctcgctctgtactctcgccccctggccctgaccagacctggcggtccca  
 20 ctccatgaggtatttctacactttcggtccggccggccgcgggagccccgcttcatgccgtggctacgt  
 gacgcacacgcagttcggttcgcacagcgacgcgcgcgagccagaggatggagccggccgtggatagagc  
 aggagggccggagtattggaccggAACACACGGAAATGTGAAGGCCAGTCAGACTGACCGAGTGACCTGG  
 gaccctgcgcggctactacaaccagagcgaggccgttctcacaccatccagatgtatggctgcacgtgggg  
 tcggacggcgcttcctccgcgggtaccggcaggacgcctacgcggcaaggattacatgccctgaaagaggacc  
 25 tgcgtcttgaccgcggcggacatggcagctcagaccaccaagaatggaggcccccTtgtggcgagca  
 gtggagagcctacctggagggcacgtgcgtggagtggctccgcagatacctggagaacgggaaggagacgc  
 cgacgg (SEQ ID NO:233) ;

A\*6817 :

atggccgtcatggcccccaaccctcgctctgactctcgccccctggccctgacccagacctggcggct  
 cccactccatgaggtaattcacacttccgtgtccggccggccggagcccccttcatcgccgtggcta  
 cgtggacgacacgcagttcgacacgcacgcggcggccagaggatggagccggccgtggata  
 5 gaggcaggagggccggagtattggaccggaacacacggaatgtgaaggcccagtcacagactgaccgagtggacc  
 tggggaccctgcgcggctactacaaccagagcggccggatccacccatccagatgtatggctgcacgt  
 ggggtcgacggcgcttcctccgggtaccggcaggTcgccctacgacggcaaggattacatggccctgaaagag  
 gacctcgcttggaccgcggccgacatggcagctcagaccaccaagaatgggaggccatgtggccg  
 agcagtggagagcctaccctggaggcacgtcggtggactggctcccgagataccctggagaacggaaaggagacgt  
 10 gcacgcacggacgcggccaaaacgcataatgactcaccacgctgtctgaccatgaagccaccctgagtgctgg  
 gccctgagtttacccctgcggagatcacactgacctggcagcggatgggaggaccacccaggacacggagc  
 tcgtggagaccaggcctgcagggatggAACCTCCAGAAGTGGTGGCTGGTGCCTCTGGACAGGAGCA  
 gagatacacctgccatgtgcagcatgagggtTtgcccaagccctcaccctgagatggag (SEQ ID  
 NO:234) ;

A\*6819 :

gctccactccatgaggtaattcacacttccgtgtcccgccccggccggggagcccccttcatcgccgtgg  
 ctacgtggacgacacgcagttcgacagcgacgcggccggccggatgggaggaccacccaggacacggagc  
 atagagcaggagggccggagtattggaccggaacacacggaatgtgaaggcccagtcacagactgaccgagtgg  
 acctggggaccctgcgcggctactacaaccagagcggccggatccacccatccagatgtatggctgcga  
 20 cgtgggtcgacggcgcttcctccgggtaccggcaggacgcctacgacggcaaggattacatggccctgaaa  
 gaggacctgcgtttggaccgcggccggacatggcagctcagaccaccaagcAcaagtggaggccatgTgg  
 cgagcagTggagagcctacctggaTggcacgtgcgtggagtggctcccgagataccctggagaacggaaaggagac  
 gctgcagcgcacgg (SEQ ID NO:235) ;

A\*6820 :

25 gctccactccatgaggtaattcacacttccgtgtcccgccccggccggggagcccccttcatcgccgtgg  
 ctacgtggacgacacgcagttcgacagcgacgcggccggccggatgggaggaccacccactcagactcaccgagtgg  
 atagagcaggagggccggagtattggaccggaacacacggaatgtgaaggcccactcagactcaccgagtgg

acctggggaccctgcgcccgtactacaaccagagcgaggccggttctcacaccatccagatgatgtatggctgcga  
 cgtggggtcggacggcActtcctccgcgggtaccggcaggacgcctacgacggcaaggattacatcgccctgaaa  
 gaggacctgcgtcttggaccgcggcggacatggcagctcagaccacaaggcacaagtggaggcggccatgtgg  
 cgagcagtggagagcctacctggagggcacgtgcgtggagtggctcccgagatacctggagaacggaaaggagac  
 5 gctgcagcgcacgg (SEQ ID NO:236) ;

A\*6821 :

gctcccactccatgaggtaattctacacttccgtgtcccgccggccggggagccccgcttcatcgccgtgg  
 ctacgtggacgcacgcagttcgtgcgggttcgacagcgacgccgcgagccagaggatggagccgcggcgcgcgtgg  
 atagagcaggagggccggagttggaccggaacacacggaatgtgaaggcccagtcacagactgaccgagttgg  
 10 acctggggaccctgcgcccgtactacaaccagagcgaggccggttctcacaccatccagatgatgtatggctgcga  
 cgtggggtcggacggcgttccctccgcgggtaccggcaggacgcctacgacggcaaggattacatcgccctgaaa  
 gaggacctgcgtcttggaccgcggcggacatggcagctcagaccacaaggcacaagtggaggcggccatgtgg  
 cgagcagtggagagcctacctggagggcacgtgcgtggagtggctcccgagatacctggagaacCggaaaggagac  
 gctgcagcgcacgg (SEQ ID NO:237) ;

15 A\*6822 :

atggccgtcatggcgccccgaaccctcgtcgtactctcgggggccctggccctgaccagacctggcgggct  
 cccactccatgaggtaattctacacccctcggtcccgccggccggccggggagccccgcttcatcgccgtggcta  
 cgtggacgcacgcagttcgtgcgggttcgacagcgacgccgcgagccagaggatggagccgcggcgcgcgtggata  
 gagcaggagggccggagttggaccggaacacacggaatgtgaaggcccagtcacagactgaccgagttggacc  
 20 tggggaccctgcAaggctactacaaccagagcgaggccggttctcacaccatccagatgatgtatggctgcacgt  
 ggggtcggacggcgttccctccgcgggtaccggcaggacgcctacgacggcaaggattacatcgccctgaaagag  
 gacctgcgtcttggaccgcggcggacatggcagctcagaccacaaggcacaagtggaggcggccatgtggcgg  
 agcagtggagagcctacctggagggcacgtgcgtggagtggctcccgagatacctggagaacggaaaggagacgc  
 25 gcagcgcacggacgcccccaaaacgcataactcaccacgcgtctgaccatgaagccaccctgaggtgctgg  
 gccctgagttctaccctgcccggatcacactgacccgtggcagccggatggggaggaccacccaggacacggagc  
 tcgtggagaccaggcctgcagggatggAACCTCCAGAAGTGGGTGGCTGGTGCCTCTGGACAGGAGCA  
 gagatacacctgcccgtgcagcatgagggtttggccaaaggccctcacccctgagatgggag (SEQ ID

NO:238) ;

A\*6823 :

5 gctcccaactccatgaggtagttctacacTtccgtgtcccgccccggccgcggggagccccgcttcatcgccgtgg  
 atacgtggacacacgcagttcgtgcggttcgacagcgacgccgcgagccagaggatggagccgcccgtgg  
 10 acctggggaccctgcgcggctactacaaccagagcgaggccggttctcacaccatccagaGatgtatggctgcga  
 cgtggggcggacgggcgttccctccgcgggtaccggcaggacgcctacgcggcaaggattacatcgccctgaaa  
 gaggacctgcgtcttgaccgcggcggacatggcagtcagaCaccaagcacaagtggaggcccatgtgg  
 cgagcagTggagagcctacctggagggcacgtgcgtggagtggctcccgagataacctggagaacggaaaggagac

10 gctgcagcgcacgg (SEQ ID NO:239) ;

A\*6901 :

15 atggccgtcatggcgccccgaaccctcgtcctgtactctcgccccctggccctgaccagacactggcgggct  
 cccactccatgaggtagttctacacccctcggtcccgccccggccgcgggagccccgcttcatcgccgtggcta  
 cgtggacacacgcagttcgtgcggttcgacagcgacgccgcgagccagaggatggagccgcccgtggata  
 20 gaggcaggagggccggagtattggaccggaaCacacggaatgtgaaggccaGtcacagactgaccgagttggacc  
 tggggaccctgcgcggctactacaaccagagcgaggccggttctcacaccGatgtatggctgcacgt  
 ggggtcggacTggcgcttccctccgcgggtaccaccagtacgcctacgcggcaaggattacatcgccctgaaagag  
 gacctgcgtcttgaccgcggcggacatggcagtcagaccaccaagcacaagtggaggcccatgTggcgg  
 agcagTTgagagcctacctggagggcaCgtgcgtggagtggctcccgagataacctggagaacggaaaggagacgc  
 25 gcagcgcacggacgccccaaaaacgcataatgactcaccacgcgtctgtgaccatgaagccaccctgaggtgctgg  
 gcccctgagttctaccctgcggagatcacactgacccctggcagcggatggggaggaccacccaggacacggagc  
 tcgtggagaccaggcctgcagggatggAACCTCCAGAAGTGGCGGTGTTGGTGCCTCTGGACAGGAGCA  
 gagatacacctgccatgtgcagcatgagggtTtgcccaagccctcaccctgagatgggag (SEQ ID  
 NO:240) ;

25 A\*7401 :

atggccgtcatggcgccccgaaccctccctcgtactctggggccctggccctgaccagacccAgggcgggct  
 cccactccatgaggtagttctcacatccgtgtcccgccccggccgcgggagccccgcttcatcgccgtggcta

cgtggacgacacgcagtcgtcggtttgacagcgacgcccgcagccagaggatggagccgccccgtggata  
 gagcaggagggccggagtattggaccaggagacacggaatgtgaaggcccactcacagactgaccgagtggacc  
 tggggaccctgcgcccgtactacaaccagagcgaggccgttctcacaccatccagatgtatggctgcacgt  
 gggccoggacgggcgcctccgcgggtaccaggcgtacgacggcaaggattacatccctgaacgag  
 5 gacctgcgtcttgaccgcggacatggcggctcagatcacccagcgaatggggccgtgtggccgg  
 agcagttgagagcctacctggagggcacgtgcgtggagtggctccgcagatacctggagaacggaaaggagacgc  
 gcagcgcacggacgcggccaaagacgcataatgactcaccacgcgtctgaccatgaggccaccctgaggtgctgg  
 gccctgagttctaccctgcggagatcacactgacctggcagcggatggggaggaccagacccaggacacggagc  
 ttgtggagaccaggcctgcagggatggaacctccagaagtggcgttgtggccttctggaCaggagca  
 10 gagatacacctgccatgtgcagcatgaggtctgccaagccctcacccctgagatggag (SEQ ID  
 NO:241) ;  
**A\*7402 :**  
 atggccgtcatggccccgaaccctccctgtactctTggggccctggccctgaccagacctggccggct  
 cccactccatgaggtattttcacatccgtgtccggccggccggagcccccgttcatgccgtggcta  
 15 cgtggacgacacgcagtcgtcggtttgacagcgacgcccgcagccagaggatggagccgccccgtggata  
 gagcaggagggccggagtattggaccaggagacacggaatgtgaaggcccactcacagactgaccgagtggacc  
 tggggaccctgcgcccgtactacaaccagagcgaggccgttctcacaccatccagatgtatggctgcacgt  
 gggccggacggcgcCtcctccgcgggtaccAgcaggacgcctacgacggcaaggattacatccctTtgaacgag  
 gacctgcgtcttgaccgcggacatggcggctcagatcacccagcgaatggggccgtgtggccgg  
 20 agcagtTgagagcctacctggagggcacgtgcgtggagTggctccgcagatacctggagaacggaaaggagacgc  
 gcagcgcacgg (SEQ ID NO:242) ;  
**A\*7403 :**  
 atggccgtcatggccccgaaccctccctgtactctTggggccctggccctgaccagaccaggccggct  
 cccactccatgaggtattttcacatccgtgtccggccggccggagcccccgttcatgccgtggcta  
 25 cgtggacgacacgcagtcgtcggtttgacagcgacgcccgcagccagaggatggagccgccccgtggata  
 gagcaggagggccggagtattggaccaggagacacggaatgtgaaggcccactcacagactgaccgagtggacc  
 tggCgaccctgcgcccgtactacaaccagagcgaggccgttctcacaccatccagatgtatggctgcacgt

ggggccggacggcgccctccgcgggtaccaggcggcctacgacggcaaggattacatcgcccttgaacgag  
gacctgcgtcttgaccgcggcggacatggcggttcagatcacccagcgcagaatggggaggcggcccggtggcgg  
agcaggtagagacgcctacctggagggcacgtgcgtggagtggctccgcagatacctggagaacgggaaggagacgc  
gcagcgcacgg (SEQ ID NO:243) ;

5 A\*7404 :

ggctcccactccatgaggtatttcgtccatccgtgtcccgccccggccgcggggagccccgttcatccgtgg  
gctacgtggacgcacgcagttcgtgcggtttgcagcgacgcgcgcgagccagaggatggagccgcggccgtg  
gatagagcaggagggtccggagtattggacgggagacacggaaAgtgaaggcccactcacagactgaccgagtg  
Gacctggggaccctgcgcggctactacaaccagagcggccgggtctcacaccatccagatgttatggctgcg  
10 acgtggggccggacggcgcGtcctccgcgggtaccagcaggacgcctacgacggcaaggattacatcgccctgaa  
cgaggacctgcgtttggaccgcggggacatggcggctcagatcacccagcgaagtggaggcggcccGtgt  
gcggagcagtTgagagcctacctggagggcacgtgcgtggagtggctccgcagataccctggagaacggaaaggaga  
cgctgcagcgcacgg (SEQ ID NO:244) ;

A\*7405 :

15 gctcccactccatgaggatttcttcacatccgtgtcccgccccggccggggagccccgcttcatcgccgtgg  
ctacgtggacgacacgcagttcgtgcggttcacagcgacgcccgcagaggatggagccgcggccgtgg  
atagagcaggagggccggagtattgggaccaggagacacggaatgtgaaggcccactcacagGctgaccgagtgg  
acctggggaccctgcgcggctactacaaccagagcggaggccggttctcacaccatccagatgttatggctgcga  
cgtggggccggacggcgccctcccgccgttaccagcaggacgcctacgacggcaaggattacatcgcccttgaac  
20 gaggacctgcgtttggaccgcggcggacatggcggctcagatcacccagcgcagatgtggaggccggccgtgg  
cgagcagttgagagcctacctggagggcacgtgcgtggagtggtccgcagatacctggagaacggaaaggagac  
gctgcagcgcacgg (SEQ ID N0:245) ;

A\*7406 :

gctcccactccatgaggatttcttcacatccgtgtcccgccccggccggggagccccgcgttcatcgccgtggg  
25 ctacgtggacacacgcagttcgtgcggttgacagcgacgcccgcagaggatggagccgcggccgtgg  
atagagcaggagggccggagtattgggaccaggagacacggaatgtgaaggcccactcacagactCaccgagtG  
acctggggaccctgcgcggctactacaaccagagcgaggccggttctcacaccatccagatgtatggctgcg

cgtggggccggacgggcgc0tcctccgccccgttaccagcaggacgcctacgacggcaaggattacatcgcccttgaac  
 gaggacctgcgtcttgaccgcggcggacatggcggttcagatcacccagcgcaagtggaggcggcccGtgtgg  
 cggagcagtTgagagcctacctggagggcacgtgcgtggactggctccgcagataacctggagaacgggaaggagac  
 gctgcagcgcacg (SEQ ID NO:246) ;

5 A\*7407 :

gctcccaactccatgaggtattttcacatccgtgtcccgccccggccggggagccccgcttcatcgccgtgg  
 ctacgtggacgcacacgcagttcgtgcggtttgcacagcgacgcgcgagccagaggatggagccgcggccgcgtgg  
 atagagcaggagggccggagtattggaccaggagacacggaatgtgaaggcccactcacagaTtgaccgagtgg  
 acctggggaccctgcgcggctactacaaccagagcgaggccggttctcacaccatccagatgtatggctgcga  
 10 cgtggggccggacgggcgc0tcctccgccccgttaccagcaggacgcctacgacggcaaggattacatcgcccttgaac  
 gaggacctgcgtcttgaccgcggcggacatggcggttcagatcacccagcgcaagtggaggcggcccGtgtgg  
 cggagcagtTgagagcctacctggagggcacgtgcgtggactggctccgcagataacctggagaacgggaaggagac  
 gctgcagcgcacgg (SEQ ID NO:247) ;

A\*7408 :

15 gctcccaactccatgaggtattttcacatccgtgtcccgccccggccggggagccccgcttcatcgccgtgg  
 ctacgtggacgcacacgcagttcgtgcggtttgcacagcgacgcgcgagccagaggatggagccgcggccgcgtgg  
 atagagcaggagggccggagtattggaccaggagacacggaatgtgaaggcccactcacagactgaccgagtgg  
 acctggggaccctgcgcggctactacaaccagagcgaggccggttctcacaccatccagatgtatggctgcga  
 cgtggggccggacgggcgcctcccgccccgttaccagcaggacgcctacgacggcaaggattacatcgcccttgaac  
 20 gaggacctgcgtcttgaccgcggcggacatggcggttcagatcacccagcgcaagtggaggcggccAgttgtgg  
 cggagcagttgagagcctacctggagggcacgtgcgtggactggctccgcagataacctggagaacgggaaggagac  
 gctgcagcgcacgg (SEQ ID NO:248) ;

A\*7409 :

gctcccaactccatgaggtattttcacatccgtgtcccgccccggccggggagccccgcttcatcgccgtgg  
 25 ctacgtggacgcacacgcagttcgtgcggtttgcacagcgacgcgcgagccagaggatggagccgcggccgcgtgg  
 atagagcaggagggccggagtattggaccaggagacacggaatgtgaaggcccactcacagactgaccgagtgg  
 acctggggaccctgcgcggctactacaaccagagcgaggccggttctcacaccatccagatgtatggctgcga

cgtggggccggacgggcgcctcccgccgttaccagcaggacgcctacgacggcaaggattacatgccttgaac  
 gaggacctgcgtcttgaccgcggcggacatggcggttcagatcacccagcgcaagtggaggcggcccgttgtgg  
 cggagcagttgagagcctacctggagggcacgtgcgtggactccgcagataacctggagaacggaaaggagac  
 gctgcagcgcacgg (SEQ ID NO:249) ;

5 A\*8001 :

Atggccgtcatgccgcggccatccctccgtactctcgccgttgcggccctggccctgaccagacgtggcaggct  
 cccactccatgaggtaatttcacatccgtgtccggccggccggagccccgttcatcgactggcata  
 cgtggacgactcgacttcgtgcagttcgacagcgacgcccgcagccagaggatggagccgcggccgtggata  
 gagcaggaggagccggagtattgggacgaggagacacggaatgtgaaggcccactcacagactaaccgagcgaacc  
 10 tggggaccctgcgcggctactacaaccagagcgaggacggttctcacaccatccagataatgtatggctgcacgt  
 ggggtcggacggcgcttcctcccggttaccggcaggacgcctacgacggcaaggattacatgccttgcacag  
 gacctgcgttgcggccatggcggttcagatcaccaagcgcaagtggaggcggccgtggccgg  
 agcagctgagagcctacctggagggcgagtgcgtggacggctccgcagataacctggagaacggaaaggagacgc  
 15 gcacgcacggaccccccacatgaccaccacccatcttgcacatggccactctgaggatggctgg  
 gccctgagtttgcggagatcacactgacctggcagcggatggggaggaccacccaggacacggagc  
 tcgtggagaccaggcctgcaggatggacccatccagaagtggcggtgtgggtacctctggaaaggagaa  
 gagatacacctgcccgtgcagcatgagggtctgcccGagccctcaccctgagatggag  
 (SEQ ID NO:25) ;

20

The probe list A1 is shown in Tables 1-1 to 1-7 and the probe list A2 is shown in Tables 2-1 to 2-6. The allele-probe lists are shown in Tables 3-1 to 3-9 and Tables 4-1 to 4-9.

25

**Table 1-1**

<b>Probe No.</b>	<b>Base Sequence</b>
0	g ccc cgc ttc atc gcC (SEQ ID No: 251)
1	gac cag gag aca cgg aat A (SEQ ID No: 252)
2	gcg gag cag cgg aga gT (SEQ ID No: 253)
3	a gtc tac ctg gag ggc C (SEQ ID No: 254)
4	gtc tac ctg gag ggc cG (SEQ ID No: 255)
5	agg tgc tgg gcc ctg G (SEQ ID No: 256)
6	g gtg gtg cct tct gga G (SEQ ID No: 257)
7	c acc ctg aga tgg gag cT (SEQ ID No: 258)
8	cc ctg aga tgg gag ctG (SEQ ID No: 259)
9	g gac atg gca gct cag atT (SEQ ID No: 260)
10	cac tcc atg agg tat ttc tC (SEQ ID No: 261)
11	c cgg ccc ggc agt ggA (SEQ ID No: 262)
12	t tct cac acc atc cag atG (SEQ ID No: 263)
13	c cat gcg gcg gag cag T (SEQ ID No: 264)
14	cat gcg gcg gag cag tT (SEQ ID No: 265)
15	ata gag cag gag agg ccT (SEQ ID No: 266)
16	c tca cag act gac cga gA (SEQ ID No: 267)
17	c tac aac cag agc gag gC (SEQ ID No: 268)
18	ga gtc tac ctg gag ggc T (SEQ ID No: 269)
19	gtg gac gac acg cag ttA (SEQ ID No: 270)
20	tg cta ctc tcg ggg gcT (SEQ ID No: 271)
21	g gcc cac tca cag act C (SEQ ID No: 272)
22	g gcc ggt tct cac acc G (SEQ ID No: 273)
23	t tct cac acc gtc cag aG (SEQ ID No: 274)
24	c gac gtg ggg tcg gac T (SEQ ID No: 275)
25	gg gag gcg gcc cat gT (SEQ ID No: 276)
26	c cat gtg gcg gag cag tT (SEQ ID No: 277)
27	gcc tac ctg gag ggc aC (SEQ ID No: 278)
28	ga gct gtg gtc gct gcT (SEQ ID No: 279)
29	ag ccc cgc ttc atc gcA (SEQ ID No: 280)
30	ccg gag tat tgg gac gG (SEQ ID No: 281)

**Table 1-2**

<b>Probe No.</b>	<b>Base Sequence</b>
31	ggc ttg cat tcc ctc cG (SEQ ID No :32)
32	c cca gtt ggg acg agt gT (SEQ ID No :33)
33	ct gct gct gct gct gcT (SEQ ID No :34)
34	a gaa gat gtc ctg gga aaC (SEQ ID No :35)
35	t gtg cag tca ggg ttt ctT (SEQ ID No :36)
36	gcc tca gag ggc aac atC (SEQ ID No :37)
37	ct gct gct gct gct gcT (SEQ ID No :38)
38	tcc tat ccc cgg aat atc aT (SEQ ID No :39)
39	gtt gct gct gct gct gcT (SEQ ID No :40)
40	cag acc ttg gcc atg aac A (SEQ ID No :41)
41	gg aat cac agc act cac G (SEQ ID No :42)
42	a cgg cga tat cta aaa tcc A (SEQ ID No :43)
43	ctc tcc caa aac ctg gag T (SEQ ID No :44)
44	tcc ttg aag gaa gat gcc G (SEQ ID No :45)
45	cat gaa gac aac agc acc aA (SEQ ID No :46)
46	ggg ttt ctc gct gag gG (SEQ ID No :47)
47	caa gga gag gag cag agT (SEQ ID No :48)
48	g gcc acc agg att tgc G (SEQ ID No :49)
49	c agg gct tct ggc ttc tG (SEQ ID No :50)
50	ag aaa aca tca gct gca gaT (SEQ ID No :51)
51	at caa cac cca gtt ggg aT (SEQ ID No :52)

**Table 1-3**

<b>Probe No.</b>	<b>Base Sequence</b>
61	ca cag act cac cga gtg G ( SEQ ID No: 3 1 2)
62	c gcg gcg gac atg gcG ( SEQ ID No: 3 1 3)
63	gt ccg gag tat tgg gac G ( SEQ ID No: 3 1 4)
64	ac ggg gag aca cgg aaC ( SEQ ID No: 3 1 5)
65	ca gtg ggc tac gtg gac A ( SEQ ID No: 3 1 6)
66	tgg gag acg gcc cat gT ( SEQ ID No: 3 1 7)
67	c cat gag gcg gag cag tT ( SEQ ID No: 3 1 8)
68	a gct cag acc acc aag cA ( SEQ ID No: 3 1 9)
69	cat gcg gcg gag cag cA ( SEQ ID No: 3 2 0)
70	cg tgg ata gag cag gag A ( SEQ ID No: 3 2 1)
71	gac ggg gag aca cgg C ( SEQ ID No: 3 2 2)
72	c tgg gcg ggc tct caG ( SEQ ID No: 3 2 3)
73	tc gac agc gac gcc gG ( SEQ ID No: 3 2 4)
74	c acc gtc cag agg atg tC ( SEQ ID No: 3 2 5)
75	cgg aaa gtg aag gcc caG ( SEQ ID No: 3 2 6)
76	g gcc cag tca cag act C ( SEQ ID No: 3 2 7)
77	g gct cag atc acc aag cA ( SEQ ID No: 3 2 8)
78	gcg gag cag ttg aga gC ( SEQ ID No: 3 2 9)
79	g ggc acg tgc gtg gaG ( SEQ ID No: 3 3 0)
80	g tgg gag gcg gcc cG ( SEQ ID No: 3 3 1)
81	gg gag gcg gcc cgt gT ( SEQ ID No: 3 3 2)
82	c cgc ggg tac cag cag T ( SEQ ID No: 3 3 3)
83	g gag ccc cgc ttc atc T ( SEQ ID No: 3 3 4)
84	gac cag gag aca cgg aaA ( SEQ ID No: 3 3 5)
85	at tgg gac gag gag aca G ( SEQ ID No: 3 3 6)
86	gac gag gag aca ggg aaA ( SEQ ID No: 3 3 7)
87	g aag gcc cac tca cag aG ( SEQ ID No: 3 3 8)
88	g agg tat ttc ttc aca tcc A ( SEQ ID No: 3 3 9)
89	ttc ctc cgc ggg tat gaA ( SEQ ID No: 3 4 0)
90	gag tat tgg gac cgg aaC ( SEQ ID No: 3 4 1)

**Table 1-4**

<b>Probe No.</b>	<b>Base Sequence</b>
91	cgg aat gtg aag gcc caG (SEQ ID No: 3 4 2)
92	g gcc ggt tct cac acc C (SEQ ID No: 3 4 3)
93	t tct cac acc ctc cag aG (SEQ ID No: 3 4 4)
94	c cgg ccc ggc cgc gA (SEQ ID No: 3 4 5)
95	cgc ggg tac cac cag tT (SEQ ID No: 3 4 6)
96	ca cag act gac cga gtg G (SEQ ID No: 3 4 7)
97	g ttg aga gcc tac ctg gaT (SEQ ID No: 3 4 8)
98	cat gag gcg gag cag cT (SEQ ID No: 3 4 9)
99	ctg aga gcc tac ctg gaT (SEQ ID No: 3 5 0)
100	tgg ata gag cag gag ggT (SEQ ID No: 3 5 1)
101	cag aga gcc tac ctg gaT (SEQ ID No: 3 5 2)
102	ggc ctg gtt ctc ctt gC (SEQ ID No: 3 5 3)
103	g aga gcc tac ctg gat gC (SEQ ID No: 3 5 4)
104	ggc tgc gac gtg egg T (SEQ ID No: 3 5 5)
105	g ggc cgg tgc gtg gaG (SEQ ID No: 3 5 6)
106	ggc cgg tgc gtg gag T (SEQ ID No: 3 5 7)
107	gc tct tgg acc gcg gcA (SEQ ID No: 3 5 8)
108	gg ccc ggc cgc ggg A (SEQ ID No: 3 5 9)
109	gg gag gcg gcc cgt gA (SEQ ID No: 3 6 0)
110	cgt gag gcg gag cag cA (SEQ ID No: 3 6 1)
111	g gca gct cag atc acc G (SEQ ID No: 3 6 2)
112	g ccg gac ggg cgc ttA (SEQ ID No: 3 6 3)
113	g cag aga gcc tac ctg C (SEQ ID No: 3 6 4)
114	g ccg gag tat tgg gac cT (SEQ ID No: 3 6 5)
115	g gca gct cag atc acc aG (SEQ ID No: 3 6 6)
116	g gag gcg gcc cgt cG (SEQ ID No: 3 6 7)
117	ac gag gag aca ggg aaa G (SEQ ID No: 3 6 8)
118	cc cag ccc acc gtc cA (SEQ ID No: 3 6 9)
119	c cgt gtg gcg gag cag T (SEQ ID No: 3 7 0)
120	gcg gag cag tgg aga gC (SEQ ID No: 3 7 1)

**Table 1-5**

<b>Probe No.</b>	<b>Base Sequence</b>
121	ggc aag gat tac atc gcc T (SEQ ID No: 372)
122	cgt gtg gcg gag cag ttT (SEQ ID No: 373)
123	c tcc cac tcc atg agg tG (SEQ ID No: 374)
124	cg ctc cgc tac tac aac G (SEQ ID No: 375)
125	ctg cgg atc gcg ctc C (SEQ ID No: 376)
126	gcg gag cag cag aga gC (SEQ ID No: 377)
127	a tct tcc cag ccc acc G (SEQ ID No: 378)
128	ctg ggc ttc tac cct gcA (SEQ ID No: 379)
129	cgc ggg tac cac cag taT (SEQ ID No: 380)
130	ag acg ctg cag cgc acT (SEQ ID No: 381)
131	g ggc gct cag atc acc C (SEQ ID No: 382)
132	ggg aaa gtg aag gcc caG (SEQ ID No: 383)
133	cc tgg gca ggc tcc caA (SEQ ID No: 384)
134	g ggc acg tgc gtg gac T (SEQ ID No: 385)
135	gac ggg cgc ttc ctc cA (SEQ ID No: 386)
136	gg acc ggc gcg gac aG (SEQ ID No: 387)
137	cg gag tat tgg gac gag G (SEQ ID No: 388)
138	a cag act gac cga gag aG (SEQ ID No: 389)
139	c cag agg atg gag ccg T (SEQ ID No: 390)
140	g agc cag agg atg gag cT (SEQ ID No: 391)
141	gc tcc cac tcc atg agC (SEQ ID No: 392)
142	g cct gca ggg gat ggG (SEQ ID No: 393)
143	c cag cgc aag tgg gag A (SEQ ID No: 394)
144	c cgc ggg tac cag cag A (SEQ ID No: 395)
145	gcc tac ctg gag ggc cT (SEQ ID No: 396)
146	tc cgc ggg tac cag cG (SEQ ID No: 397)
147	tcc ctc cgc ggg tac cA (SEQ ID No: 398)
148	gg tac cag cag gac gCT (SEQ ID No: 399)
149	cg cag ttc gtg cgg ttG (SEQ ID No: 400)
150	c cag agc gag gac ggt A (SEQ ID No: 401)

**Table 1-6**

Probe No.	Base Sequence
151	cag atg atg tat ggc tgc C ( SEQ ID No: 4 0 2 )
152	g atg gag ccg cgg gcA ( SEQ ID No: 4 0 3 )
153	g gac ctg cag aca cgg C ( SEQ ID No: 4 0 4 )
154	gag acg ctg cag cgc G ( SEQ ID No: 4 0 5 )
155	tgg gag gcg gcc cgt T ( SEQ ID No: 4 0 6 )
156	gg gag gcg gcc cgt C ( SEQ ID No: 4 0 7 )
157	g ggc tac gtg gac gac G ( SEQ ID No: 4 0 8 )
158	cac acc atc cag ata atg C ( SEQ ID No: 4 0 9 )
159	gtg cag cat gag ggt ctC ( SEQ ID No: 4 1 0 )
160	gg tac cgg cag gac gcT ( SEQ ID No: 4 1 1 )
161	c cac tcc atg agg tat ttc A ( SEQ ID No: 4 1 2 )
162	g aca cgg aat gtg aag gG ( SEQ ID No: 4 1 3 )
163	c cta gtt ctc ttt gga gct A ( SEQ ID No: 4 1 4 )
164	gg ccg gac ggg cgc C ( SEQ ID No: 4 1 5 )
165	gcc tac ctg gat ggc aC ( SEQ ID No: 4 1 6 )
166	t ggc acg tgc gtg gag T ( SEQ ID No: 4 1 7 )
167	gac cag gag aca ggg aaA ( SEQ ID No: 4 1 8 )
168	gc acg gac ccc ccc aG ( SEQ ID No: 4 1 9 )
169	ac gag gac ctg agc tcC ( SEQ ID No: 4 2 0 )
170	gcg ccg tgg ata gag cG ( SEQ ID No: 4 2 1 )
171	g cgg gcg ccg tgg atG ( SEQ ID No: 4 2 2 )
172	c ccc atc gtg ggc atc C ( SEQ ID No: 4 2 3 )
173	ctg cag cgc acg gac G ( SEQ ID No: 4 2 4 )
174	g gac gcc ccc aag acG ( SEQ ID No: 4 2 5 )
175	ctc ttt gga gct gtg atc G ( SEQ ID No: 4 2 6 )
176	gac ggc aag gat tac atc T ( SEQ ID No: 4 2 7 )
177	gtc tac ctg gag ggc aC ( SEQ ID No: 4 2 8 )
178	cgg aga gcc tac ctg gaT ( SEQ ID No: 4 2 9 )
179	g gac ggt tct cac acc C ( SEQ ID No: 4 3 0 )
180	g ggc gag tgc gtg gag T ( SEQ ID No: 4 3 1 )

**Table 1-7**

<b>Probe No.</b>	<b>Base Sequence</b>
181	g gag tgg ctc cgc aga C (SEQ ID No: 4 3 2)
182	ga acc ttc cag aag tgg gT (SEQ ID No: 4 3 3)
183	cc atg agg tat ttc tac acT (SEQ ID No: 4 3 4)
184	g agg tat ttc tac acc tcc A (SEQ ID No: 4 3 5)
185	cgc ggg tac cgg cag cT (SEQ ID No: 4 3 6)
186	cat gtg gcg gag cag cT (SEQ ID No: 4 3 7)
187	g ccg gag tat tgg gac G (SEQ ID No: 4 3 8)
188	ag tgg gag gcg gcc cT (SEQ ID No: 4 3 9)
189	gc ggg tac cgg cag gT (SEQ ID No: 4 4 0)
190	tgg aga gcc tac ctg gaT (SEQ ID No: 4 4 1)
191	tg ggg tcg gac ggg cA (SEQ ID No: 4 4 2)
192	gc aga tac ctg gag aac C (SEQ ID No: 4 4 3)
193	gac ctg ggg acc ctg cA (SEQ ID No: 4 4 4)
194	gt tct cac acc atc cag aG (SEQ ID No: 4 4 5)
195	g gcc ctg acc cag acc A (SEQ ID No: 4 4 6)
196	c ctc ctc ctg cta ctc tT (SEQ ID No: 4 4 7)
197	ctc ctc cgc ggg tac cA (SEQ ID No: 4 4 8)
198	gac cga gtg gac ctg gC (SEQ ID No: 4 4 9)
199	g aag gcc cac tca cag G (SEQ ID No: 4 5 0)
200	ca cag att gac cga gtg G (SEQ ID No: 4 5 1)
201	c aag tgg gag gcg gcc A (SEQ ID No: 4 5 2)
202	c ttc aca tcc gtg tcc cC (SEQ ID No: 4 5 3)
203	cag ccc acc atc ccc att (SEQ ID No: 4 5 4)

**Table 2-1**

<b>Probe No.</b>	<b>Base Sequence</b>
0	a gag acc agA gac ttg aca (SEQ ID No:53)
1	ctg gag act Aag gaa tgg a (SEQ ID No:54)
2	cga tat cta Aaa tcc ggc g (SEQ ID No:55)
3	cta aaa tcc Ggc gta gtc c (SEQ ID No:56)
4	c aca ctg aGc tgg cgt c (SEQ ID No:57)
5	att att ttc taC gtc tgt tgt t (SEQ ID No:58)
6	tg ctg tcc Ggg gat gga (SEQ ID No:59)
7	acc cgc agT gag gcc tc (SEQ ID No:60)
8	g agg aga aGg gtg ccc c (SEQ ID No:61)
9	tg atg tca gCt ctt ggg tc (SEQ ID No:62)
10	c ctg cgc tAt gac agg c (SEQ ID No:63)
11	gaa tgg aca Gtg ccc cag (SEQ ID No:64)
12	c aca ctg aCc tgg cgt c (SEQ ID No:65)
13	gg att tgc cGg gga gag g (SEQ ID No:66)
14	gaa tcc agc Ata gtc ctg a (SEQ ID No:67)
15	a gag acc agG gac ttg ac (SEQ ID No:68)
16	ctg gag act Gag gaa tgg (SEQ ID No:69)
17	gtt gct gct G gct gct g (SEQ ID No:70)
18	g gtg gcc acT agg att tg (SEQ ID No:71)
19	gct gct g gct gct gCt a (SEQ ID No:72)
20	agc gag gCA tca gag gg (SEQ ID No:73)
21	tcc caa aac Gtg gag act g (SEQ ID No:74)
22	at ttc tac taT gat ggg gag (SEQ ID No:75)
23	cta gaa tcc Agc gta gtc c (SEQ ID No:76)
24	t ggg tcc Gct ggc tcc (SEQ ID No:77)
25	cc aag aca cTC tat cac gc (SEQ ID No:78)
26	a gag gag caA agg ttc acc (SEQ ID No:79)
27	cga tat cta Gaa tcc ggc g (SEQ ID No:80)
28	tac tac gat Agg gag ctc t (SEQ ID No:81)
29	g ggt cca gGg ctc gtg (SEQ ID No:82)
30	cag gat ggg Cta tct ttg a (SEQ ID No:83)

**Table 2-2**

<b>Probe No.</b>	<b>Base Sequence</b>
31	at tcc ctc cGg gag att ag (SEQ ID No: 84)
32	t gct gct gct gct gct at (SEQ ID No: 85)
33	ct gct gct gcT att ttt gtt (SEQ ID No: 86)
34	c ctg gga aAC aag aca tgg (SEQ ID No: 87)
35	a ggg ttt ctT gct gag gta (SEQ ID No: 88)
36	g ggc aac atC acc gtg ac (SEQ ID No: 89)
37	gct gct gct gct gcT att (SEQ ID No: 90)
38	cgg aat atc aTa ctg acc tg (SEQ ID No: 91)
39	gcc atg aac Atc agg aat tt (SEQ ID No: 92)
40	gc act cac Gct gtg ccc (SEQ ID No: 93)
41	cta aaa tcc Agc gta gtc c (SEQ ID No: 94)
42	aac ctg gag Tct gag gaa t (SEQ ID No: 95)
43	gaa gat gcc Gtg aag acc (SEQ ID No: 96)
44	c agc acc aAg agc tcc c (SEQ ID No: 97)
45	c gct gag gGa cat ctg g (SEQ ID No: 98)
46	g gag cag agT ttc acc tg (SEQ ID No: 99)
47	agg att tgc Gaa gga gag g (SEQ ID No: 100)
48	ct ggc ttc tGt ccc tgg a (SEQ ID No: 101)
49	a gct gca gaT ggt cca ga (SEQ ID No: 102)
50	ca gtt ggg aTg agt gac c (SEQ ID No: 103)

**Table 2-3**

<b>Probe No.</b>	<b>Base Sequence</b>
61	g aca cgg aaC gtg aag gc ( SEQ ID No : 5 1 6)
62	tac gtg gac Aac acg cag ( SEQ ID No : 5 1 7)
63	cc acc aag cAc aag tgg g ( SEQ ID No : 5 1 8)
64	ag cag gag Agt ccg gag ( SEQ ID No : 5 1 9)
65	gag aca cgg Caa gtg aag ( SEQ ID No : 5 2 0)
66	g ggc tct caG tcc atg ag ( SEQ ID No : 5 2 1)
67	c gac gcc gGg agc cag ( SEQ ID No : 5 2 2)
68	g agg atg tCt ggc tgc g ( SEQ ID No : 5 2 3)
69	g aag gcc caG tca cag ac ( SEQ ID No : 5 2 4)
70	tc acc aag cAc aag tgg g ( SEQ ID No : 5 2 5)
71	ag ttg aga gCc tac ctg g ( SEQ ID No : 5 2 6)
72	tgc gtg gaG tgg ctc cg ( SEQ ID No : 5 2 7)
73	gcg gcc cGt gtg gcg ( SEQ ID No : 5 2 8)
74	g gcc cgt gTg gcg gag ( SEQ ID No : 5 2 9)
75	tac cag cag Tac gcc tac ( SEQ ID No : 5 3 0)
76	cgc ttc atc Tca gtg ggc ( SEQ ID No : 5 3 1)
77	gag gag aca Ggg aaa gtg ( SEQ ID No : 5 3 2)
78	g aca ggg aaA gtg aag gc ( SEQ ID No : 5 3 3)
79	ac tca cag aGt cac cga g ( SEQ ID No : 5 3 4)
80	ttc aca tcc Atg tcc cgg ( SEQ ID No : 5 3 5)
81	c ggg tat gaA cag cac gc ( SEQ ID No : 5 3 6)
82	g gac cgg aaC aca cgg aa ( SEQ ID No : 5 3 7)
83	tct cac acc Ctc cag atg ( SEQ ID No : 5 3 8)
84	ct cac acc Ctc cag agg ( SEQ ID No : 5 3 9)
85	cc ctc cag aGg atg tat g ( SEQ ID No : 5 4 0)
86	ggc cgc gAg gag ccc ( SEQ ID No : 5 4 1)
87	c cac cag tTc gcc tac g ( SEQ ID No : 5 4 2)
88	c tac ctg gaT ggc acg tg ( SEQ ID No : 5 4 3)
89	g gag cag cTg aga gcc t ( SEQ ID No : 5 4 4)
90	cag gag ggT ccg gag ta ( SEQ ID No : 5 4 5)

Table 2-4

Probe No.	Base Sequence
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91	ctg gag aac Cgg aag gag ( SEQ ID No : 5 4 6 )
92	c ctg gat gCc acg tgc g ( SEQ ID No : 5 4 7 )
93	c gtg ggg Tcg gac ggg ( SEQ ID No : 5 4 8 )
94	acc gcg gcA gac atg gc ( SEQ ID No : 5 4 9 )
95	c cgc ggg Aag ccc cg ( SEQ ID No : 5 5 0 )
96	gcg gcc cGt gag gcg ( SEQ ID No : 5 5 1 )
97	g gcc cgt gAg ecg gag ( SEQ ID No : 5 5 2 )
98	cag atc acc Gag cgc aag ( SEQ ID No : 5 5 3 )
99	ggg cgc ttA ctc cgc g ( SEQ ID No : 5 5 4 )
100	c tac ctg Cag ggc cgg ( SEQ ID No : 5 5 5 )
101	at tgg gac cTg cag aca c ( SEQ ID No : 5 5 6 )
102	ag atc acc aGg cgc aag t ( SEQ ID No : 5 5 7 )
103	gcc cgt cGg gcg gag ( SEQ ID No : 5 5 8 )
104	aca ggg aaa Gtg aag gcc ( SEQ ID No : 5 5 9 )
105	g aag tgg gcA gct gtg gt ( SEQ ID No : 5 6 0 )
106	g tgg aga gCc tac ctg g ( SEQ ID No : 5 6 1 )
107	tac atc gcc Ttg aac gag g ( SEQ ID No : 5 6 2 )
108	cc atg agg tGt ttc tcc ac ( SEQ ID No : 5 6 3 )
109	tac tac aac Gag agc gag g ( SEQ ID No : 5 6 4 )
110	tc gcg ctc Cgc tac tac ( SEQ ID No : 5 6 5 )
111	g cag aga gCc tac ctg g ( SEQ ID No : 5 6 6 )
112	c tac cct gcA gag atc ac ( SEQ ID No : 5 6 7 )
113	c cac cag taT gcc tac ga ( SEQ ID No : 5 6 8 )
114	cag atc acc Cag cgc aag ( SEQ ID No : 5 6 9 )
115	a ggc tcc caA tcc atg ag ( SEQ ID No : 5 7 0 )
116	t gtg gtg gtA cct tct gg ( SEQ ID No : 5 7 1 )
117	cg gag cag Tgg aga gtc ( SEQ ID No : 5 7 2 )
118	c gtg gac Tgg ctc cgc ( SEQ ID No : 5 7 3 )
119	c ttc ctc cAc ggg tac c ( SEQ ID No : 5 7 4 )
120	g gcg gac aGg gcg gct ( SEQ ID No : 5 7 5 )

**Table 2-5**

<b>Probe No.</b>	<b>Base Sequence</b>
121	tca cag act Cac cga gag ( SEQ ID No : 5 7 6 )
122	gg gac gag Cag aca ggg ( SEQ ID No : 5 7 7 )
123	c cga gag aGc ctg cgg ( SEQ ID No : 5 7 8 )
124	ac tca cag aTt gac cga ga ( SEQ ID No : 5 7 9 )
125	g gag ccg Tgg gcg cc ( SEQ ID No : 5 8 0 )
126	g atg gag cTg cgg gcg ( SEQ ID No : 5 8 1 )
127	c tcc atg agC tat ttc tcc ( SEQ ID No : 5 8 2 )
128	ggg gat ggG acc ttc ca ( SEQ ID No : 5 8 3 )
129	cct tct gga Cag gag cag ( SEQ ID No : 5 8 4 )
130	tac cag cag Aac gct tac g ( SEQ ID No : 5 8 5 )
131	g gag ggc cTg tgc gtg ( SEQ ID No : 5 8 6 )
132	g tac cag cGg gac gct t ( SEQ ID No : 5 8 7 )
133	c ggg tac cAg cag gac g ( SEQ ID No : 5 8 8 )
134	cag gac gcT tac gac gg ( SEQ ID No : 5 8 9 )
135	gtg cgg ttG gac agc ga ( SEQ ID No : 5 9 0 )
136	gag gac ggt Act cac acc ( SEQ ID No : 5 9 1 )
137	t ggc tgc Cac gtg ggg ( SEQ ID No : 5 9 2 )
138	ccg cgg gcA ccg tgg ( SEQ ID No : 5 9 3 )
139	cag aca cgg Cat gtg aag ( SEQ ID No : 5 9 4 )
140	g gcc cgt Tgg gcg gag ( SEQ ID No : 5 9 5 )
141	g gcc cgt Cgg gcg ga ( SEQ ID No : 5 9 6 )
142	tg gac gac Gcg cag ttc ( SEQ ID No : 5 9 7 )
143	cag ata atg Cat ggc tgc g ( SEQ ID No : 5 9 8 )
144	gag ggt ctC ccc aag cc ( SEQ ID No : 5 9 9 )
145	agg tat ttc Acc aca tcc g ( SEQ ID No : 6 0 0 )
146	at gtg aag gGc cac tca c ( SEQ ID No : 6 0 1 )
147	c acg gag ctT gtg gag ac ( SEQ ID No : 6 0 2 )
148	c ggg cgc Ctc ctc cg ( SEQ ID No : 6 0 3 )
149	g gat ggc aCg tgc gtg g ( SEQ ID No : 6 0 4 )
150	c ccc ccc aGg acg cat ( SEQ ID No : 6 0 5 )

**Table 2-6**

Probe No.	Base Sequence
151	ctg agc tcG tgg acc gc ( SEQ ID No : 6 0 6)
152	g ata gag cGg gag ggg c ( SEQ ID No : 6 0 7)
153	ccg tgg atG gag cag ga ( SEQ ID No : 6 0 8)
154	c acg gac Gcc ccc aag ( SEQ ID No : 6 0 9)
155	ag tgg gcg Tct gtg gtg ( SEQ ID No : 6 1 0)
156	c ccc aag acG cat atg ac ( SEQ ID No : 6 1 1)
157	g cag gag Agg ccg gag ( SEQ ID No : 6 1 2)
158	gat tac atc Tcc ctg aac g ( SEQ ID No : 6 1 3)
159	tc cgc aga Cac ctg gag ( SEQ ID No : 6 1 4)
160	g aag tgg gTg gct gtg g ( SEQ ID No : 6 1 5)
161	t ttc tac acT tcc gtg tcc ( SEQ ID No : 6 1 6)
162	ac acc tcc Atg tcc cgg ( SEQ ID No : 6 1 7)
163	c cgg cag Cac gcc tac ( SEQ ID No : 6 1 8)
164	tat tgg gac Gag gag aca c ( SEQ ID No : 6 1 9)
165	g gcg gcc cTt gtg gcg ( SEQ ID No : 6 2 0)
166	c cgg cag gTc gcc tac ( SEQ ID No : 6 2 1)
167	g gac ggg cAc ttc ctc c ( SEQ ID No : 6 2 2)
168	g acc ctg cAc ggc tac t ( SEQ ID No : 6 2 3)
169	cc atc cag aGg atg tat gg ( SEQ ID No : 6 2 4)
170	c cag acc Agg gcg ggc ( SEQ ID No : 6 2 5)
171	g cta ctc tTg ggg gcc c ( SEQ ID No : 6 2 6)
172	g gac ctg gCg acc ctg ( SEQ ID No : 6 2 7)
173	cac tca cag Gct gac cga ( SEQ ID No : 6 2 8)
174	g gcg gcc Agt gtg gcg ( SEQ ID No : 6 2 9)
175	gtg tcc cCg ccc ggc ( SEQ ID No : 6 3 0)
176	t ctg ccc Gag ccc ctc ( SEQ ID No : 6 3 1)

**Table 3-1**

Allele Number	Probe Number for Detection								
	0	1	2	3	4	5	6	7	8
A*010101	0	1	2	3	4	5	6	7	8
A*010102	9								
A*0102	10	11							
A*0103	12								
A*0106	13	14							
A*0107	15	16	17						
A*0108	18								
A*0109	19								
A*020101	20	21	22	23	24	25	26	27	28
A*020102	29	30	31	21	22	23	24	32	33
A*020103	37								
A*020104	38								
A*020105	39								
A*020106	40								
A*020107	41	42							
A*020108	43								
A*020109	31	21	22	23	24	25	44	26	27
A*0202	45	42							
A*0203	20	46	47	48	27	28			
A*0204	20	21	22	24	25	26		27	28
A*0205	45	28							
A*0206	20	49	21	22	23	24	25	26	27
A*0207	50								
A*0208	49	45							
A*0209	51								
A*0210	20	23	52	25	26	27	28		
A*0211	53	42	28						

**Table 3-2**

Allele Number	Probe Number for Detection									
A*0212	20	25	54	27	28					
A*0213	20	55	56	27	28					
A*0214	45	26	28							
A*0216	57	42	28							
A*021701	20	58	24	25	26	27	28			
A*021702	20	58	24	25	26	27	59			
A*0218	60									
A*0219	61	22	62	25	54	27				
A*022001	29	63	30	21	22	23	24	32	33	34
A*022002								35	35	25
A*0221								26	27	36
A*0222	20	21	22	23	24	25	25	44	27	28
A*0224	29	30	31	21	22	23	24	32	33	35
A*0225	46	66		26		27				
A*0226	20	55	67	27	28					
A*0227	22	68	69	27	36					
A*0228	70	68	25	26	36					
A*0229	71	68								
A*0230	72									
A*0231	73									
A*0233	74									
A*0234	31	75	76	22	23	24	25	44	26	27
A*0235	31	75	22	23	24	32	33	34	35	25
A*0236	29	30	31	21	22	23	24	32	33	34
A*0237	22	68		25	54		27	35	25	26
								35	25	27

**Table 3-3**

Allele Number	Probe Number for Detection								
A*0238	68	46	56						
A*0239	52	62	77	25	26	78	27	79	36
A*0240	68	80	81	27	36				
A*0241	49	29	30	31	21	22	23	24	82
A*0242								34	35
A*0243							25	26	27
A*0244	49	22	25	54	27	36			
A*0245	29	84	21	22	23	24	32	33	34
A*0246	20	85	86	21	22	23	24	25	26
A*0247									27
A*0248	85	68	25	26	78	27	79	36	
A*0249	29	30	31	21	22	23	24	32	33
A*0250	88	31	21						
A*0251	49	68	80	81	27	36			
A*0252	89	68	25	26					
A*0254	49	22	68	25	54	27			
A*0255	90	21	22	23	24	32	33	34	35
A*0256	20	91	76	22	23	24	25	26	27
A*0257	20	49	92	24	25	26	27	28	
A*0258	92	93	68	25	26	78	27	79	36
A*0259	94								
A*0260	95	26							
A*030101	91	96	55	48	67	97			
A*030102	91	96	55	98	99				
A*030103	100	91	96	55	48	67	97		
A*0302	54	101							
A*0304	102								
A*0305	91	96	17	62	55	48	67	27	
A*0306	103								
A*0307	25	44	26	97					

**Table 3-4**

Allele Number	Probe Number for Detection						
A*0308	96	55	48	67	97		
A*0309	76	61	55	48	67	97	
A*0310	96	104	62	25	54	27	79
A*110101	49	91	96	69	105	106	36
A*110102	107						
A*1102	108						
A*1103	80	109	110				
A*1104	49	91	96	69	27	79	36
A*1105	111						
A*1106	91	76	61	69	105	106	
A*1107	112						
A*1108	49	91	96	55			
A*1109	113						
A*1110	49	90	96	69	106		
A*1111	114	96	69	106			
A*1112	49	91	96	17	69	105	106
A*1113	115						
A*1114	108	116					
A*2301	117	118					
A*2302	85	34	80	81	119	120	27
A*2303	33	121	80	122			
A*2304	85	34	80	81	122	78	27
A*2305	123	122					
A*2306	124						
A*2309	118						
A*240201	85	125	54	126	127		
A*240202	85	125	17	58	104	33	34
A*240203	128						
A*240204	129						



**Table 3-6**

Allele Number	Probe Number for Detection					
A*2435	139					
A*2437	140					
A*2438	141					
A*2501	138	142	28			
A*2502	91	138	142	28		
A*2503	138	143	47	48	106	
A*2504	138	47	56	106		
A*2601	90	48	142			
A*2602	144					
A*2603	21	61	48	142		
A*2604	145					
A*2605	16	48	142			
A*2606	146					
A*2607	31	48	142			
A*2608	56	142				
A*2609	147	131	143	47	27	
A*2610	34	131	143	47	48	
A*2612	131	143	66	44		
A*2613	91	147	131	143	47	48
A*2614	49	90	147	148	55	48
A*2615	149					
A*2616	10	90	147	131	143	47
A*2617	150					
A*2618	147	148	80	81	119	
A*29010101	151					
A*2902	152	36	28			
A*2903	152	28				
A*2904	153	80				
A*2905	152	56	36			

**Table 3-7**

Allele Number	Probe Number for Detection						
A*2906	122	154					
A*2907	152	58	122	36			
A*3001	10	15	155				
A*3002	11	15	156	27	36		
A*3003	11	156	27	36			
A*3004	11	25	36				
A*3006	157						
A*3007	86	156	27	36			
A*3008	49	15	155				
A*3009	11	81	122	36			
A*3010	158						
A*3011	10	155					
A*3012	15	156	27	36			
A*310102	15	121	159				
A*3102	84	53	104	147	121	80	122
A*3103	53	160	80	122	36		
A*3104	160	159					
A*3105	15	53	104	147	121	80	122
A*3106	15	53	104	121	80	122	36
A*3107	15	125	147	121	81	122	36
A*3108	161	85	125	147	121	122	36
A*3109	162						
A*3201	125	122	163				
A*3202	54	163					
A*3203	125	164	80	122			
A*3204	138	97	165	166			
A*3205	167	125	122	163			
A*3206	138	25	26	27	36		
A*3207	10	138	80	81	122	27	36

**Table 3-8**

Allele Number	Probe Number for Detection						
A*3301	168						
A*3303	90	121	159				
A*3304	169						
A*3305	170						
A*3306	171						
A*3401	172						
A*3402	47	67	27	36	173	174	175
A*3403	160	55	67	27			
A*3404	70	47	67	36			
A*3405	176						
A*3601	177	79					
A*3602	178						
A*3603	179	177	79	36			
A*3604	105						
A*4301	114	142	28				
A*6601	91	96	48	142			
A*6602	57	175	28				
A*6603	47	57	180				
A*6604	47	181					
A*680101	49	91	104	44	182	28	
A*680102	183	91	104	44	182	28	
A*6802	184	28					
A*680301	183	104	44	182	28		
A*680302	183	35	44				
A*6804	90	53	68	36			
A*6805	183	21	35	44			
A*6806	91	89	68	25			
A*6807	91	185	68	25			

**Table 3-9**

Allele Number	Probe Number for Detection							
A*6808	186	182	28					
A*6809	183	54						
A*6810	49	187	91	104	25	44	27	36
A*6812	183	91	44					
A*6813	49	91	104	44	182			
A*6814	68	154						
A*6815	184	90	21					
A*6816	188							
A*6817	189	28						
A*6819	68	25	44	190				
A*6820	191							
A*6821	25	192						
A*6822	193							
A*6823	183	194	35	44				
A*6901	91	22	23	24	25	44	26	27
A*7401	195	28						
A*7402	196	96	164	197	121	122		36
A*7403	198							
A*7404	31	96	164	80	122			
A*7405	199							
A*7406	21	61	164	80	122			
A*7407	53	200	164	80	122			
A*7408	201							
A*7409	202							
A*8001	203							

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**Table 4-1**

| Allele Number | Probe Number for Detection |    |    |    |    |    |    |    |
|---------------|----------------------------|----|----|----|----|----|----|----|
|               | 0                          | 1  | 2  | 3  | 4  | 5  | 6  | 7  |
| A*010101      | 0                          |    |    |    |    |    |    |    |
| A*010102      | 8                          |    |    |    |    |    |    |    |
| A*0102        | 9                          | 10 |    |    |    |    |    |    |
| A*0103        | 11                         |    |    |    |    |    |    |    |
| A*0106        | 12                         | 13 |    |    |    |    |    |    |
| A*0107        | 14                         | 15 | 16 |    |    |    |    |    |
| A*0108        | 17                         |    |    |    |    |    |    |    |
| A*0109        | 18                         |    |    |    |    |    |    |    |
| A*020101      | 19                         | 20 | 21 | 22 | 23 | 24 | 25 | 13 |
| A*020102      | 28                         | 29 | 20 | 21 | 22 | 23 | 24 | 30 |
| A*020103      | 31                         | 32 | 33 | 34 | 35 |    |    |    |
| A*020104      | 36                         |    |    |    |    |    |    |    |
| A*020105      | 37                         |    |    |    |    |    |    |    |
| A*020106      | 38                         |    |    |    |    |    |    |    |
| A*020107      | 39                         | 27 |    |    |    |    |    |    |
| A*020108      | 40                         |    |    |    |    |    |    |    |
| A*020109      | 20                         | 21 | 22 | 23 | 24 | 25 | 12 | 13 |
| A*0202        | 41                         | 27 |    |    |    |    |    |    |
| A*0203        | 19                         | 42 | 43 | 44 | 26 | 27 |    |    |
| A*0204        | 19                         | 20 | 21 | 45 | 24 | 25 | 13 | 26 |
| A*0205        | 46                         | 41 | 27 |    |    |    |    |    |
| A*0206        | 19                         | 46 | 20 | 21 | 22 | 23 | 24 | 25 |
| A*0207        | 13                         | 26 | 27 |    |    |    |    |    |
| A*0208        | 47                         |    |    |    |    |    |    |    |
| A*0209        | 46                         | 41 |    |    |    |    |    |    |
| A*0210        | 48                         |    |    |    |    |    |    |    |
| A*0211        | 19                         | 49 | 50 | 25 | 13 | 26 | 27 |    |
| A*0212        | 51                         | 27 |    |    |    |    |    |    |
| A*0213        | 19                         | 25 | 52 | 26 | 27 |    |    |    |
|               | 19                         | 43 | 52 | 26 | 27 |    |    |    |

**Table 4-2**

| Allele Number | Probe Number for Detection |    |    |    |    |    |    |    |    |    |
|---------------|----------------------------|----|----|----|----|----|----|----|----|----|
| A*0214        | 41                         | 13 | 27 |    |    |    |    |    |    |    |
| A*0216        | 53                         | 27 |    |    |    |    |    |    |    |    |
| A*021701      | 54                         |    |    |    |    |    |    |    |    |    |
| A*021702      | 19                         | 55 | 24 | 25 | 13 | 26 | 56 |    |    |    |
| A*0218        | 57                         |    |    |    |    |    |    |    |    |    |
| A*0219        | 58                         | 22 | 59 | 25 | 52 | 26 |    |    |    |    |
| A*022001      | 28                         | 60 | 29 | 21 | 22 | 23 | 24 | 30 | 31 | 32 |
| A*022002      |                            |    |    |    |    |    |    | 33 | 25 | 13 |
| A*0221        | 61                         |    |    |    |    |    |    | 26 | 34 |    |
| A*0222        | 62                         |    |    |    |    |    |    |    |    |    |
| A*0224        | 19                         | 20 | 21 | 22 | 23 | 24 | 25 | 44 | 26 | 27 |
| A*0225        | 28                         | 29 | 20 | 21 | 22 | 23 | 24 | 30 | 31 | 33 |
| A*0226        | 63                         |    |    |    |    |    |    | 25 | 13 | 26 |
| A*0227        | 64                         |    |    |    |    |    |    | 34 |    |    |
| A*0228        | 65                         |    |    |    |    |    |    |    |    |    |
| A*0229        | 66                         |    |    |    |    |    |    |    |    |    |
| A*0230        | 67                         |    |    |    |    |    |    |    |    |    |
| A*0231        | 68                         |    |    |    |    |    |    |    |    |    |
| A*0234        | 20                         | 69 | 21 | 22 | 23 | 24 | 25 | 12 | 13 | 26 |
| A*0235        | 28                         | 69 | 22 | 23 | 24 | 30 | 31 | 32 | 33 | 25 |
| A*0236        | 22                         | 63 |    |    |    |    |    | 13 | 26 | 34 |
| A*0237        | 63                         |    |    |    |    |    |    |    |    |    |
| A*0238        | 42                         |    |    |    |    |    |    |    |    |    |
| A*0239        | 50                         | 59 | 70 | 25 | 13 | 71 | 26 | 72 | 34 |    |
| A*0240        | 63                         | 73 | 74 | 26 | 34 |    |    |    |    |    |
| A*0241        | 46                         | 28 | 29 | 20 | 21 | 22 | 23 | 24 | 75 | 32 |
| A*0242        | 76                         |    |    |    |    |    |    | 33 | 25 | 13 |
| A*0244        | 46                         | 22 | 25 | 52 | 26 | 34 |    |    |    |    |

Table 4-3

**Table 4-4**

| Allele Number | Probe Number for Detection |     |     |     |     |     |    |
|---------------|----------------------------|-----|-----|-----|-----|-----|----|
| A*1103        | 96                         | 97  | 52  |     |     |     |    |
| A*1104        | 46                         | 69  | 58  | 52  | 26  | 72  | 34 |
| A*1105        | 98                         |     |     |     |     |     |    |
| A*1106        | 69                         | 21  | 58  | 52  | 72  | 34  |    |
| A*1107        | 99                         |     |     |     |     |     |    |
| A*1108        | 46                         | 69  | 58  | 43  |     |     |    |
| A*1109        | 100                        |     |     |     |     |     |    |
| A*1110        | 46                         | 82  | 58  | 52  | 34  |     |    |
| A*1111        | 101                        | 58  | 52  | 34  |     |     |    |
| A*1112        | 46                         | 69  | 58  | 16  | 52  | 72  | 34 |
| A*1113        | 102                        |     |     |     |     |     |    |
| A*1114        | 95                         | 103 |     |     |     |     |    |
| A*2301        | 104                        | 13  | 71  | 105 |     |     |    |
| A*2302        | 77                         | 32  | 73  | 74  | 44  | 106 | 26 |
| A*2303        | 31                         | 107 | 73  | 13  |     |     |    |
| A*2304        | 77                         | 32  | 73  | 74  | 13  | 71  | 26 |
| A*2305        | 108                        | 13  |     |     |     |     |    |
| A*2306        | 109                        |     |     |     |     |     |    |
| A*2309        | 13                         | 71  | 105 |     |     |     |    |
| A*240201      | 77                         | 110 | 52  | 111 | 105 |     |    |
| A*240202      | 77                         | 110 | 16  | 55  | 93  | 31  | 32 |
| A*240203      | 112                        |     |     |     |     |     |    |
| A*240204      | 113                        |     |     |     |     |     |    |
| A*240301      | 111                        | 34  | 105 |     |     |     |    |
| A*240302      | 77                         | 52  | 111 | 26  | 72  | 34  |    |
| A*2404        | 77                         | 52  | 111 | 105 |     |     |    |
| A*2405        | 77                         | 114 | 52  | 111 | 26  |     |    |
| A*2406        | 77                         | 32  | 59  | 25  | 44  | 106 | 26 |
| A*2407        | 69                         | 110 | 52  | 111 | 105 |     |    |

**Table 4-5**

| Allele Number | Probe Number for Detection |     |     |     |     |    |     |     |     |     |
|---------------|----------------------------|-----|-----|-----|-----|----|-----|-----|-----|-----|
| A*2408        | 115                        | 116 |     |     |     |    |     |     |     |     |
| A*2410        | 77                         | 52  | 111 | 72  | 34  | -  |     |     |     |     |
| A*2413        | 77                         | 32  | 59  | 25  | 13  | 71 | 26  |     |     |     |
| A*2414        | 77                         | 24  | 31  | 32  | 59  | 52 | 111 | 26  |     |     |
| A*2415        | 77                         | 110 | 16  | 83  | 31  | 32 | 59  | 52  | 111 | 26  |
| A*2417        | 77                         | 110 | 16  | 55  | 93  | 32 | 59  | 52  | 111 | 26  |
| A*2418        | 32                         | 43  | 12  | 13  | 88  |    |     |     |     |     |
| A*2419        | 77                         | 69  | 58  | 55  | 93  | 31 | 32  | 59  | 52  | 111 |
| A*2420        | 77                         | 110 | 16  | 55  | 93  | 31 | 32  | 59  | 52  | 111 |
| A*2421        | 77                         | 110 | 16  | 55  | 93  | 31 | 59  | 52  | 111 | 26  |
| A*2422        | 117                        | 34  | 105 |     |     |    |     |     |     |     |
| A*2423        | 77                         | 52  | 111 | 26  | 118 |    |     |     |     |     |
| A*2424        | 69                         | 55  | 32  | 73  | 74  | 13 | 71  | 26  |     |     |
| A*2425        | 108                        | 52  |     |     |     |    |     |     |     |     |
| A*2426        | 119                        |     |     |     |     |    |     |     |     |     |
| A*2427        | 120                        |     |     |     |     |    |     |     |     |     |
| A*2428        | 77                         | 58  | 16  | 55  | 93  | 31 | 32  | 59  | 52  | 111 |
| A*2429        | 110                        | 16  | 55  | 31  | 32  | 59 | 52  | 111 | 26  |     |
| A*2430        | 77                         | 121 | 110 | 16  | 55  | 93 | 31  | 32  | 59  | 52  |
| A*2431        | 122                        | 25  | 52  | 26  |     |    |     |     |     |     |
| A*2432        | 123                        | 32  | 52  | 26  |     |    |     |     |     |     |
| A*2433        | 59                         | 25  | 52  | 26  | 27  |    |     |     |     |     |
| A*2434        | 124                        | 52  |     |     |     |    |     |     |     |     |
| A*2435        | 125                        |     |     |     |     |    |     |     |     |     |
| A*2437        | 126                        |     |     |     |     |    |     |     |     |     |
| A*2438        | 127                        |     |     |     |     |    |     |     |     |     |
| A*2501        | 123                        | 128 | 129 |     |     |    |     |     |     |     |
| A*2502        | 69                         | 123 | 128 | 129 |     |    |     |     |     |     |
| A*2503        | 123                        | 42  | 43  | 44  | 34  |    |     |     |     |     |

**Table 4-6**

| Allele Number | Probe Number for Detection |     |     |     |
|---------------|----------------------------|-----|-----|-----|
| A*2504        | 123                        | 43  | 52  | 34  |
| A*2601        | 82                         | 44  | 128 |     |
| A*2602        | 130                        |     |     |     |
| A*2603        | 21                         | 58  | 44  | 128 |
| A*2604        | 131                        |     |     |     |
| A*2605        | 15                         | 44  | 128 |     |
| A*2606        | 132                        |     |     |     |
| A*2607        | 20                         | 44  | 128 |     |
| A*2608        | 52                         | 128 |     |     |
| A*2609        | 133                        | 114 | 42  | 43  |
| A*2610        | 32                         | 114 | 42  | 43  |
| A*2612        | 114                        | 42  | 25  | 44  |
| A*2613        | 69                         | 133 | 114 | 42  |
| A*2614        | 46                         | 82  | 133 | 134 |
| A*2615        | 135                        |     |     |     |
| A*2616        | 9                          | 82  | 133 | 114 |
| A*2617        | 136                        |     |     |     |
| A*2618        | 133                        | 134 | 73  | 74  |
| A*29010101    | 137                        |     |     |     |
| A*2902        | 138                        | 34  | 129 |     |
| A*2903        | 138                        | 129 |     |     |
| A*2904        | 139                        | 73  |     |     |
| A*2905        | 138                        | 52  | 34  |     |
| A*2906        | 138                        | 13  | 34  |     |
| A*2907        | 138                        | 55  | 13  | 34  |
| A*3001        | 9                          | 14  | 140 |     |
| A*3002        | 10                         | 14  | 141 | 26  |
| A*3003        | 10                         | 141 | 26  | 34  |
| A*3004        | 10                         | 25  | 34  |     |

Table 4-7

**Table 4-8**

| Allele Number | Probe Number for Detection |     |     |     |     |     |     |
|---------------|----------------------------|-----|-----|-----|-----|-----|-----|
| A*3402        | 43                         | 13  | 26  | 34  | 154 | 156 | 155 |
| A*3403        | 134                        | 43  | 13  | 26  |     |     |     |
| A*3404        | 157                        | 43  | 13  | 34  |     |     |     |
| A*3405        | 158                        |     |     |     |     |     |     |
| A*3601        | 26                         | 72  |     |     |     |     |     |
| A*3602        | 88                         |     |     |     |     |     |     |
| A*3603        | 83                         | 26  | 72  | 34  |     |     |     |
| A*3604        | 72                         |     |     |     |     |     |     |
| A*4301        | 101                        | 128 | 129 |     |     |     |     |
| A*6601        | 69                         | 58  | 44  | 128 |     |     |     |
| A*6602        | 53                         | 155 | 129 |     |     |     |     |
| A*6603        | 43                         | 53  | 34  |     |     |     |     |
| A*6604        | 43                         | 159 |     |     |     |     |     |
| A*680101      | 46                         | 69  | 93  | 44  | 160 | 27  |     |
| A*680102      | 161                        | 69  | 93  | 44  | 160 | 27  |     |
| A*6802        | 162                        | 27  |     |     |     |     |     |
| A*680301      | 161                        | 93  | 44  | 160 | 27  |     |     |
| A*680302      | 161                        | 33  | 44  |     |     |     |     |
| A*6804        | 82                         | 51  | 63  | 34  |     |     |     |
| A*6805        | 161                        | 21  | 33  | 44  |     |     |     |
| A*6806        | 69                         | 81  | 63  | 25  |     |     |     |
| A*6807        | 69                         | 163 | 63  | 25  |     |     |     |
| A*6808        | 89                         | 160 | 27  |     |     |     |     |
| A*6809        | 161                        | 52  |     |     |     |     |     |
| A*6810        | 46                         | 164 | 69  | 93  | 25  | 44  | 26  |
| A*6812        | 161                        | 69  | 44  |     |     |     |     |
| A*6813        | 46                         | 69  | 93  | 44  | 160 |     |     |
| A*6814        | 46                         | 164 | 69  | 93  | 25  | 44  | 26  |
| A*6815        | 162                        | 82  | 21  |     |     |     | 34  |

**Table 4-9**

| Allele Number | Probe Number for Detection |     |     |     |     |    |    |    |
|---------------|----------------------------|-----|-----|-----|-----|----|----|----|
| A*6816        | 165                        |     |     |     |     |    |    |    |
| A*6817        | 166                        | 27  |     |     |     |    |    |    |
| A*6819        | 63                         | 25  | 44  | 88  |     |    |    |    |
| A*6820        | 167                        |     |     |     |     |    |    |    |
| A*6821        | 25                         | 91  |     |     |     |    |    |    |
| A*6822        | 168                        |     |     |     |     |    |    |    |
| A*6823        | 161                        | 169 | 33  | 44  |     |    |    |    |
| A*6901        | 82                         | 69  | 22  | 23  | 24  | 25 | 12 | 13 |
| A*7401        | 170                        | 129 |     |     |     |    |    |    |
| A*7402        | 171                        | 58  | 148 | 133 | 107 |    | 13 | 34 |
| A*7403        | 172                        |     |     |     |     |    |    |    |
| A*7404        | 20                         | 58  | 148 | 73  | 13  |    |    |    |
| A*7405        | 173                        |     |     |     |     |    |    |    |
| A*7406        | 21                         | 58  | 148 | 73  | 13  |    |    |    |
| A*7407        | 51                         | 58  | 148 | 73  | 13  |    |    |    |
| A*7408        | 174                        |     |     |     |     |    |    |    |
| A*7409        | 175                        |     |     |     |     |    |    |    |
| A*8001        | 176                        |     |     |     |     |    |    |    |

(Example 3)

Probes for identification of HLA-B allele

Extraction of DNA from 1 ml of human blood was performed using GFX Genomic Blood DNA Purification Kit from Amersham Biosciences in the same manner as in Example 1.

Next, quantitative PCR was carried out in the same manner as in Example 1 except that probes in the probe list B1 were used and 3  $\mu$ l of the mixed primers consisting of 1  $\mu$ l each of respective solutions of the following primers (10 pmol/ $\mu$ l) :

CTGAGCTCTCCTCCTACACA (SEQ ID NO:5181155)

TCCTTCCCCTCTCCAGGT (SEQ ID NO:5191156)

AGGTCTCGGTCAAGGGCCA (SEQ ID NO:5201157)

After PCR amplification, the sample was identified being B\*520101, referring to Amp Plot and Dissociation curves on a display of 5700 software and the allele-probe list B1 (described later).

(Example 4)

Extraction of DNA from 1 ml of human blood was performed in the same way as in Example 1. PCR of human HLA-B was then performed in the same manner as in Example 2 except that 2  $\mu$ l of the mixed primer consisting of 1  $\mu$ l each of the respective solutions of the following primers at 10 pmol/ $\mu$ l and 13  $\mu$ l of ultra pure water used:

CTGAGCTCTCCTCCTACACA (SEQ ID NO:5181155)

GCTCCCACTCCATGAGGTATTTC (SEQ ID NO:5211158).

At the same time, a DNA microarray was prepared to identify the allele in the specimen described above in the same manner as in Example 2, except that 5 probes in the probe list B2 were to form the probe dots respectively.

Then, hybridization was performed using the above specimen and the prepared DNA microarray in the same manner as in Example 2. Fluorometry measurement 10 was conducted with GenePix4000B (Axon). Referring to the allele-probe list B2 (described later), the sample was identified as B\*520101.

#### Allele list

15 B\*070201

```

atgctggcatggcccccaaccgtccctgtctcgccgcctggccctgaccgagac
tggccggctccca
ctccatgaggatttctacacctccGtgtccggccggccggagcccgcttcatctc
a
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acacccagttcgtagggttcgacagcgacgccgcgagtccgagagaggagcc
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gtgaccccca
aagacacacgtga
cccaccacccatctgaccatgaggccaccctgagggtctggccctgggtt
tac
ctgcggagatcacactgacc
25 tggcagcggatggcgaggaccaaactcaggacactgagcttgtggagacc
agaccaggagatagaac
ttcc
gtggcagctgtgggtgccttctggagaagagcagagatacacatgccatgt
acagcatgagg
ggctgcgaagcccc
tcaccctgagatggagccgtttccca
gtccaccgtcccatgtggcattgttgcgtggctggctgtcctaNNNgca

```

gttgtggcatcgagctgtggcgctgtgtatgttaggaggaagagtccagggtgga (SEQ ID NO:5221159)

B\*070202

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B\*070203

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25 B\*0703

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## B\*0706

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NO: 5351172)

B\*0714

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20      NO: 5361173)

B\*0715

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NO: 5371174)

B\*0716

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20 B\*1532

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 ggagggccggagtattgggaccggagacacagatctccaagaccaacacacagacttaccgagagagcctgcggaaacc  
 tgccgcggctactacaaccagagcgaggccgggtctcacaccctccagaggatgtCtgctgcgcacgtggggccggacgg  
 25 cgcctcccgccggcatgaccagtccgcctacgcggcaaggattacatgcgcctgaacgaggacctgagctcctggac  
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**NO: 6191256)**

B\*1533

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5 ggagggccggagtattgggaccggagacacagatctcaagaccaacacagacttaccgagagagcctgcggacc  
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10 **NO: 6201257)**

B\*1534

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**NO: 6211258)**

20 B\*1535

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25 cgccctccgcggcatgaccagtccgcctacgacggcaaggattacatgcgcctgaacgaggacctgcgcctggac  
cgcGcggacacggcggctcagatcacccagcgcaagtgggaggcggcccgtagggcggagcagTggagagcctacctgg  
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**NO: 6231259)**

B\*1536

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5 ggagggccggagtattgggaccggagacacagatctcaagaccaacacagacttaccgagagaacctgcgc  
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10 **NO: 6241260)**

B\*1537

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**NO: 6251261)**

20 B\*1538

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**NO: 6261262)**

B\*1539

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**10 NO: 6271263)**

B\*1540

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**NO: 6281264)**

**20 B\*1542**

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**NO: 6291265)**

B\*1543

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5 ggagggccggagtattgggaccggagacacagatctcaagaccaacacagacttaccgagagGacctgcggaccc  
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10 **NO: 6301266)**

B\*1544

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**NO: 6311267)**

20 B\*1545

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25 cgccctcctccgcggcatgaccagtacgcctacgacggcaaggattacatgcgcctgaacgaggacctgagctcctggac  
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**NO: 6321268)**

B\*1546

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 ctactacaaccagagcgaggccgggtctcacaccctccagaggatgtacggctgcgacgtggggccggacggcgcctcc  
 tcccgcccatgaccagtCcgctacgacggcaaggattacatgcgcctgaacgaggacctgagctcctggaccgcggc  
 gacacggcggctcagatcacccagcgcaagtgggaggccggccgtgaggcggagcagTggagagcctacctggaggccT  
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B\*1547

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 NO: 6341270)

20 B\*1548

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**NO: 6351271)**

B\*1549

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 5 ggagggccggagtattgggaccggagacacagatctcaagaccaacacacGgacttaccgagagagcctgcggacc  
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10 **NO: 6361272)**

B\*1550

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 cgccggccgacacggccgctcagatcacccagcgaagtgggaggccggccgtgaggcggagcagTggagagcctacctgg  
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**NO: 6371273)**

20 B\*1551

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 tgccgcggctactacaaccagagcggaggccgggtctcacaccctccagaggatgtacggctgcacgtggccggacgg  
 25 cgccctcctccgcggcatgaccagtCgcctacgcggcaaggattacatgcgcctgaacgaggacctgagctcctggac  
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**NO: 6381274)**

**B\*1552**

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 ggatagagcaggagggccggatattgggaccggaacacacagatctGcaagac  
 10 tactacaaccagagcgaggccgggtctcacaccctccagagGatgtacggctgc  
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 gacacggccgctcagatcacccagcgcaagtggaggccggccgtTggcg  
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 15 gtgcgtggagtggctccgcagatacctggagaacgggaaggagacgc  
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**B\*1553**

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 acacgcTgttcgtgagggtcgacagcgacgccAcgagtccgaggaaggagcc  
 10 tactacaaccagagcgaggccgggtctcacaccctccagaggatgtacgg  
 ctgcacgtggggccggacggacggctcgaccgtggaccgcggcatgacc  
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 15 cgacgcTgagagcctacctggagggcgtgcgcgcG (SEQ ID NO: 6401276)

**B\*1554**

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 10 acgcggatattgggaccggaGacacagatctCcaagac  
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 15 cgacgcTgagagcctacctggagggcgtgcgcgcG (SEQ ID NO: 6401276)

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 15 gtgcgtggagtggctccgcagatacctggagaacgggaaggagacgctgcagcgcgccggccccaaagacacatgtga  
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B\*1558

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B\*5109

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 25 cgccggcggacaccgcggctcagatcacccagcgcaagtggaggcggccgtgTggcggagcagcTgagagcctacctgg  
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NO: 9621556)

## B\*5110

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## B\*5112

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## B\*511301

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**NO: 9651559)**

B\*511302

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10 **NO: 9661560)**

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**NO: 9671561)**

20 B\*5115

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**NO: 9681562)**

B\*5116

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**10 NO: 9691563)**

B\*5117

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**NO: 9701564)**

**20 B\*5118**

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**NO: 9711565)**

B\*5119

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10 **NO: 9721566)**

B\*5120

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**NO: 9731567)**

20 B\*5121

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**NO: 9741568)**

B\*5122

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**10 NO: 9751569)**

B\*5123

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**NO: 9761570)**

**20 B\*5124**

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**NO: 9771571)**

B\*5126

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**10 NO: 9781572)**

B\*5128

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 15 cgctccgctactacaaccagagcggaggccgggtctcacacttggcagacgatgtatggctgcacgtggggccggacgg  
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**NO: 9791573)**

**20 B\*5129**

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5 B\*5130

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B\*5131

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B\*5132

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 NO: 9841578)  
 20 B\*5134  
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 aagacacatgtg  
 cccaccacccatctgaccatgaggccaccctgagggtgctggccctggcttaccctgcggagatcacactgacc  
 20 tggcagcggatggcgaggaccaaactcaggacaccgcgttgtggagaccagaccgcggagacaca  
 gtggcagctgtgggtgcctctggagaagagcagagatacacatgccatgtacagcatgaggggctgcgaagcccc  
 tcaccctgagatggagccatctccctccagtcaccgtccccatcgtggcatttgtctggctgtccta... gca  
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B\*7301

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 tccgcgggtataaccagttcgccctacgcggcaaggattacatgcgcctgaacgaggacctgcgcctggaccgcgc  
 gacacggcggctcagatcacccagcgcaagtgggaggcggccgtgtggcggagcagctgagagcctacggaggcga  
 5 gtgcgtggagtggctccgcagacacctggagaacgggaaggagacgcgtgcagcgcggaccccccaagacacacgtga  
 cccaccacccatctctgaccatgaggccaccctgaggtgctggccctggcttaccctgcggagatcacactgacc  
 tggcagcgggatggcggaggacaaactcaggacaccgcggctgtggagaccaggccagcaggagatggAACCTTCCAGAA  
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 gcaccctgagatggaaagccatcttcccagtccaccatccccatcgtggcattgtgtggccttgccctggcttcgg  
 10 accgttagctgtggCgtgtggcgctgtgtatgttaggagagctcagggtgga (SEQ ID NO:10481642)  
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 acacccagttcgtgagggtcgacagcgacgccgcgagtccgaggacggagccccggccatggatagagcaggagggg  
 15 ccggagtttggacccgaacacacagatctTcaagaccaacacacagactgaccgagagacccctgcggAACCTGCGCG  
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 20 gtgcgtggagtggctccgcagaCacctggagaacgggaaggagacgcgtgcagcgcggaccccccaagacacacgtga  
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 tggcagcgggatggcggaggacaaactcaggacactgaggctgtggagaccaggccagcaggagatagaaccc  
 gtggcagctgtgggtgccttcggagaagagcagagatacacatccatgtacagcatgaggggctgcgaagcccc  
 tcaccctgagatggagccatcttcccagtccaccatccccatcgtggcattgtgtggccttgccctggcttc... gca  
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 25 B\*780201  
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acacccagttcgtagggttcgacagcgacgcgcgagtcggaggacggagccccggcgccatggatagagcaggaggg  
 ccggagtttgggaccgaaacacacagatctTcaagaccaacacacagactTaccgagagagcctgcggAACCTGCGCG  
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 5 gacaccgcggctcagatcacccagcgcaagtggaggccggccgtgaggcggagcagcTgagagcctacggaggccct  
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 gtggcagctgtgggtgccttctggagaagagcagagatacacatgcgcctgtacagcatgagggctgccgaagcccc  
 10 tcaccctgagatggagccatcttcccagtccaccatccccatcgtggcattgttgcgtggccctggcttc... gca  
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 B\*780202  
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 gtggacacaccagttcgtgaggttcgacagcgacgcgcgagtcggaggacggagccccggccAtggatagagca  
 15 ggagggccggagtattggaccgaaacacacagatctTcaagaccaacacacagactTaccgagagagcctgcggaaacc  
 tgcgcggctactacaaccagagcgaggccgggtctcacacttggcagaCgatgttaTggctgcacgtggccggacgg  
 cgccctccgcggcataaccagtacgcctacgacggcaaAgattacatgcgcctgaacgaggacctgAgctcctggac  
 cgccggacaccggctcagatcacccagcgcaagtggaggccggccgtgaggcggagcagcTgagagcctacctgg  
 agggccTgtgcgtggagtggctccgcagaCacctggagaacgggaaggagacgcgcgcgg (SEQ ID  
 20 NO:1051\_1645)  
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 ggagggccggagtattggaccgaaacacacagatctGcaagaccaacAcacagactgaccgagagagcctgcggaaacc  
 25 tgccgcggctactacaaccagagcgaggccgggtctcacacttggcagaCgatgttaTggctgcacgtggccggacgg  
 cgccctccgcggcataaccagtacgcctacgacggcaaAgattacatgcgcctgaacgaggacctgAgctcctggac  
 cgccggacaccggctcagatcacccagcgcaagtggaggccggccgtgaggcggagcagcTgagagcctacctgg

agggccTgtgcgtggagtggctccgagaCacctggagaacgggaaggagacgctgcagcgccgg (SEQ ID

NO:10521646)

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5 gtggacgacaccagttcgtgaggttcgacagcgcacgcccggcgacttccgaggacggagccccggccatggatagagca  
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tgcgccgtactacaaccagagcggccgggtctcacacttggcagacgatgtatggctgcacgtggccggacgg  
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cgccggccggacaccggcgtcagatcacccagcgcagaatgggaggccggccctgTggcggagcagcTgagagcctacctgg  
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cacgtgacccaccaccccGtctctgaccatgaggccaccctgaggtgctggccctggcttaccctgcggagatcac  
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15 B\*7805

gctcccactccatgaggtatttctacaccgccatgtcccgccggccggggagccccgcttcatcgcagtggctac  
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tgcgccgtactacaaccagagcggccgggtctcacacttggcagaCgatgtatggctgcacgtggccggacgg  
20 cgccctcccgccggcataaccagtaacgcctacgacggcaaAgattacatgcgcctgaacgaggacctgagctcctggac  
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NO:10541648)

B\*8101

25 atgctggcatggcccccaaccgtccctctgtctggggcagtggccctgaccgagacctggccggctccca  
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 tccgcggcataaccagtacgcctacgcggcaaggattacatgcctgaacgaggacctgcgcctggaccgcgc  
 gacacggcggctcagatctccagcgcaagttggaggccgtgtggcggagcagctgagagcctacggaggcga  
 5 gtgcgtggagtggctccgcagatacctggagaacggaaaggacaagctggagcgcgtgaccccccaaaagacacacgtga  
 cccaccacccatctgaccatgaggccaccctgaggtgctggccctgggttctaccctgcggagatcacactgacc  
 tggcagcggatggcggaggacaaactcaggacactgagcttggagaccagaccaggagatagaacccttcagaa  
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 tcaccctgagatgggagccgtttccactccacccgtccatgtggcatttgtgctggccctggctgccta... gca  
 10 gttgtggcatcgagctgtggctgctgtgtatgttaggagaaagagttcTggta (SEQ ID NO:10551649)  
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 ggagggccggagtattgggaccggAACACACAGATCTACAAGGCCAGGCACAGACTGACCAGAGAGCCTGC  
 15 tgccgcgtactacaaccagagcgaggccgggtctcacaccctccagaggatgttgctgcacccggccggacgg  
 ccctccgcggcataaccagttagcctacgcggcaaggattacatgcctgaacgaggacctgagctctggac  
 cgccggacaccggcgtcagatcacccagcgcaagtggaggccggccgtgtggcggagcaggacagcc  
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 (SEQ ID NO:10561650)  
 20 **B\*8202**  
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 acacgcagttcgtgaggttcgacagcgcgcgcgagtcgagagaggagccggccgcgtggatagagcaggagg  
 ccggagtttgggaccggAACACACAGATCTACAAGGCCAGGCACAGACTGACCAGAGAGCCTGC  
 25 ctactacaaccagagcgaggccgggtctcacaccctccagaggatgttgctgcacccggccggacggcgc  
 tccgcggcataaccagttagcctacgcggcaaggattacatgcctgaacgaggacctgagctctggaccgc  
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 gtggcagctgtgggtgccttcggagaagagcagagatacacatgccatgtacagcatgagggctgccgaagcccc  
 5 tcaccctgagatggagccatttcccagtccaccatccccatcgtggcattttgtggcctggctgtccta... gca  
 gttgtggcatcgagctgtggTgctactgtatgttaggagaaagagctcaggtgga (SEQ ID NO:10571651)  
 B\*8301  
 atgcgggtcacggcccccaaccctccctgctgctctggggcaGtggccctgaccgagacctggccggctccca  
 ctccatgaggtatttctacaccgccAtgtcccggccggccggggagcccgcttcatctcagtggctacgtggacg  
 10 acacccagttcgtagggttcgacagcgacgcccggccggggagggccggccgtggatagagcaggaggg  
 ccggagtttgggacccgaaacacacagatctacaaggcccaggcacagactgaccgagagagccctgcggAACCTGCG  
 ctactacaaccagagcgaggccgggtctcacatcAtccagaggatgtacggctgcgacgtggggccggacggcgcctcc  
 tccgcggTatgaccagGacgcctacgcggcaaggattacatgcctgaacgaggacctgagctcctggaccgcggcg  
 gacaccgcggctcagatcacccagcgcaagtgggaggcggccgtgtggcgagcaggaCagagcctacctggagggccT  
 15 gtgcgtggagtGcctccgcagataacctggagaacgggaaggagacgctgcagcgcGg (SEQ ID NO:10581652)

The following Tables 5-1 to 5-9 show Probe list  
 B1, and Tables 6-1 to 6-8 show Probe list B2. The  
 Allele-probe list is shown in Tables 7 and 8.

Table 5-1

| Probe No. | Base Sequence                                           |
|-----------|---------------------------------------------------------|
| 0         | agg tat ttc tac acc tcc G ( SEQ ID No: <u>1638</u> )    |
| 1         | ct cac acc ctc cag agC ( SEQ ID No: <u>2639</u> )       |
| 2         | gc ctc ctc cgc ggg C ( SEQ ID No: <u>3640</u> )         |
| 3         | c cgc ggg cat gac cag T ( SEQ ID No: <u>4641</u> )      |
| 4         | gt gag gcg gag cag cG ( SEQ ID No: <u>5642</u> )        |
| 5         | t gag gcg gag cag cgG ( SEQ ID No: <u>6643</u> )        |
| 6         | gcc tac ctg gag ggc gA ( SEQ ID No: <u>7644</u> )       |
| 7         | ggc gag tgc gtg gag tG ( SEQ ID No: <u>8645</u> )       |
| 8         | c ggg aag gac aag ctG G ( SEQ ID No: <u>9646</u> )      |
| 9         | g gag tgg ctc cgc agG ( SEQ ID No: <u>10647</u> )       |
| 10        | gc tac gtg gac gac acG ( SEQ ID No: <u>11648</u> )      |
| 11        | a cag atc tac aag acc aac A ( SEQ ID No: <u>12649</u> ) |
| 12        | gt gag gcg gag cag gaC ( SEQ ID No: <u>13650</u> )      |
| 13        | c ctc ctc cgc ggg cat A ( SEQ ID No: <u>14651</u> )     |
| 14        | cg tct tcc cag tcc acc A ( SEQ ID No: <u>15652</u> )    |
| 15        | ct cac acc ctc cag agG ( SEQ ID No: <u>16653</u> )      |
| 16        | ac cgg aac aca cag atc tT ( SEQ ID No: <u>17654</u> )   |
| 17        | a cag atc ttc aag acc aac A ( SEQ ID No: <u>18655</u> ) |
| 18        | cgc ggg cat gac cag tC ( SEQ ID No: <u>19656</u> )      |
| 19        | c cgg aac aca cag atc tG ( SEQ ID No: <u>20657</u> )    |
| 20        | ca cag act gac cga gag aA ( SEQ ID No: <u>21658</u> )   |
| 21        | g gcc ggg tct cac atc A ( SEQ ID No: <u>22659</u> )     |
| 22        | ac atc atc cag agg atg taT ( SEQ ID No: <u>23660</u> )  |
| 23        | gg atg tat ggc tgc gac C ( SEQ ID No: <u>24661</u> )    |
| 24        | c tgc gac ctg ggg ccC ( SEQ ID No: <u>25662</u> )       |
| 25        | ag aca cag aag tac aag cG ( SEQ ID No: <u>26663</u> )   |
| 26        | c aag cgc cag gca cag G ( SEQ ID No: <u>27664</u> )     |
| 27        | gca cag gct gac cga gT ( SEQ ID No: <u>28665</u> )      |
| 28        | gag gcc ggg tct cac aT ( SEQ ID No: <u>29666</u> )      |
| 29        | g tct cac atc atc cag agG ( SEQ ID No: <u>30667</u> )   |
| 30        | cgc ctc ctc cgc ggg T ( SEQ ID No: <u>31668</u> )       |

Table 5-2

| <b>Probe No.</b> | <b>Base Sequence</b>                                    |
|------------------|---------------------------------------------------------|
| 31               | c aag gcc cag gca cag G ( SEQ ID No: <u>32669</u> )     |
| 32               | c aag acc aac aca cag act T ( SEQ ID No: <u>33670</u> ) |
| 33               | cgc ggg tat gac cag tC ( SEQ ID No: <u>34671</u> )      |
| 34               | gcc tac ctg gag ggc aC ( SEQ ID No: <u>35672</u> )      |
| 35               | ctg gag aac ggg aag gaG ( SEQ ID No: <u>36673</u> )     |
| 36               | g acg ctg gag cgc gcG ( SEQ ID No: <u>37674</u> )       |
| 37               | gcc tac ctg gag ggc cT ( SEQ ID No: <u>38675</u> )      |
| 38               | ggc ctg tgc gtg gag tC ( SEQ ID No: <u>39676</u> )      |
| 39               | c ggc cgc ggg gag cT ( SEQ ID No: <u>40677</u> )        |
| 40               | tcc tgg acc gcc gcg A ( SEQ ID No: <u>41678</u> )       |
| 41               | cgg aac ctg cgc ggc C ( SEQ ID No: <u>42679</u> )       |
| 42               | gcc tac ctg gag ggc C ( SEQ ID No: <u>43680</u> )       |
| 43               | gg gag gcg gcc cgt gT ( SEQ ID No: <u>44681</u> )       |
| 44               | gt gtg gcg gag cag gaC ( SEQ ID No: <u>45682</u> )      |
| 45               | cgt gag gcg gag cag cT ( SEQ ID No: <u>46683</u> )      |
| 46               | c cgg aac aca cag atc tC ( SEQ ID No: <u>47684</u> )    |
| 47               | ca cag act tac cga gag G ( SEQ ID No: <u>48685</u> )    |
| 48               | ctg cgg acc ctg ctc C ( SEQ ID No: <u>49686</u> )       |
| 49               | c cgc ggg tat gac cag G ( SEQ ID No: <u>50687</u> )     |
| 50               | cac tcc atg agg tat ttc G ( SEQ ID No: <u>51688</u> )   |
| 51               | gg tat ttc gac acc gcc A ( SEQ ID No: <u>52689</u> )    |
| 52               | cg aga gag gag ccg cC ( SEQ ID No: <u>53690</u> )       |
| 53               | a gcc tac ctg gag ggc A ( SEQ ID No: <u>54691</u> )     |
| 54               | g atg tgt agg agg aag agC ( SEQ ID No: <u>55692</u> )   |
| 55               | ctg cgc acc gcg ctc C ( SEQ ID No: <u>56693</u> )       |
| 56               | c cga gag aac ctg cgg aT ( SEQ ID No: <u>57694</u> )    |
| 57               | gag aac ctg cgg atc gC ( SEQ ID No: <u>58695</u> )      |
| 58               | ctg cgg atc gcg ctc C ( SEQ ID No: <u>59696</u> )       |
| 59               | c acg ctg gag cgc gcG ( SEQ ID No: <u>60697</u> )       |
| 60               | g gac cgg aac aca cag aC ( SEQ ID No: <u>61698</u> )    |

Table 5-3

| <b>Probe No.</b> | <b>Base Sequence</b>        |
|------------------|-----------------------------|
| 61               | c act tgg cag acg atg taT   |
| 62               | g gag tat tgg gac cgg G     |
| 63               | c cgg gac aca cag atc tT    |
| 64               | cgt gtg gcg gag cag cT      |
| 65               | cgc ggg tac cac cag G       |
| 66               | c aca cag act gac cga gT    |
| 67               | ttc aag acc aac aca cag G   |
| 68               | c cgg gag aca cag atc tC    |
| 69               | g tgc tgg gcc ctg ggC       |
| 70               | g gct cag atc acc cag cT    |
| 71               | g tot cac act tgg cag aC    |
| 72               | cgc ggg cat aac cag ttA     |
| 73               | cg atg tat ggc tgc gac C    |
| 74               | tgg gag cca tct tcc caA     |
| 75               | gag cag ctg aga gcc tG      |
| 76               | gg tct cac acc ctc cag T    |
| 77               | cc aga cca gca gga gaC      |
| 78               | cc ctg aga tgg gag ccA      |
| 79               | c atg agg tat ttc tac acc G |
| 80               | c tcc cac tcc atg agg C     |
| 81               | g cag gag ggg ccg gaA       |
| 82               | g gag tgg ctc cgc aga C     |
| 83               | g acg ctg cag cyc gcG       |
| 84               | c acc ctc cag agg atg taT   |
| 85               | tc ctg ctg ctc tcg ggA      |
| 86               | gcg ccc cgg gcg ccA         |
| 87               | gag tat tgg gac cgg gaG     |
| 88               | c cgt gag gcg gag cag T     |
| 89               | gac caa act cag gac acC     |
| 90               | cc gcc tac gac ggc aaA      |

Table 5-4

| <b>Probe No.</b> | <b>Base Sequence</b>      |
|------------------|---------------------------|
| 91               | g agc tcc tgg acc gcG     |
| 92               | g gat tac atc gcc ctg aaT |
| 93               | c gac acg cag ttc gtg C   |
| 94               | cag atc tcc aag acc aac A |
| 95               | c gga gct gtg gtc gct A   |
| 96               | c acc ctc cag agg atg tT  |
| 97               | tac gcc tac gac ggc aaA   |
| 98               | cag atc tgc aag acc aac A |
| 99               | cg agt ccg agg atg gcT    |
| 100              | g ggc ctg tgc gtg gaC     |
| 101              | gg gcc ggc tcc cac tT     |
| 102              | ac atg aag gcc tcc gcG    |
| 103              | gca gct gtg gtg gtg cT    |
| 104              | gtg acc cac cac ccc G     |
| 105              | g tat tgg gac cgg gag aT  |
| 106              | gcg agt ccg agg atg gC    |
| 107              | c acc ctc cag agg atg tC  |
| 108              | gg acc gcc gcg gac aA     |
| 109              | g atg tac ggc tgc gac C   |
| 110              | g tct cac acc ctc cag aC  |
| 111              | ct cac acc ctc cag acG    |
| 112              | ac cga gag aac ctg cgC    |
| 113              | c ggg aag gag acg ctg C   |
| 114              | cc ctg aac gag gac ctg A  |
| 115              | g gag ccc cgc ttc atc G   |
| 116              | agg tat ttc tac acc gcc A |
| 117              | t ccg agg atg gcg ccC     |
| 118              | g ttc gac agc gac gcc A   |
| 119              | gag ccg cgg gcg ccA       |
| 120              | g gcg gag cag ctg aga A   |

Table 5-5

| <b>Probe No.</b> | <b>Base Sequence</b>        |
|------------------|-----------------------------|
| 121              | a acc tac ctg gag ggc C     |
| 122              | acc tac ctg gag ggc cT      |
| 123              | c tcc aag acc aac aca cG    |
| 124              | c tac gtg gac gac acg cT    |
| 125              | c cgg gag aca cag atc tT    |
| 126              | ac aca cag act tac cga gT   |
| 127              | ca cag act tac cga gtg aA   |
| 128              | c cgc ggg cat aac cag tT    |
| 129              | cc cag ttc gtg agg ttc A    |
| 130              | c cgg gag aca cag atc tG    |
| 131              | g gct cag atc acc cag cA    |
| 132              | acc tac ctg gag ggc aC      |
| 133              | cac tcc atg agg tat ttc C   |
| 134              | gac ccc cca aag aca caT     |
| 135              | gag aca cag atc tcc aag aT  |
| 136              | gg gag gcg gcc cgt C        |
| 137              | gcg ccg tgg ata gag caA     |
| 138              | g acc aac aca cag act tac A |
| 139              | ac acc ctc cag aat atg taT  |
| 140              | g gag ccc cgc ttc att G     |
| 141              | g gat tac atc gcc ctg aaG   |
| 142              | c acc ctc cag agg atg tG    |
| 143              | gcg ccg tgg ata gag caA     |
| 144              | cga gag aac ctg cgc aC      |
| 145              | gag aac ctg cgc acc gC      |
| 146              | g tct cac acc ctc cag aaT   |
| 147              | cag gag ggg ccg gag C       |
| 148              | ctg ggc ttc tac cct gG      |
| 149              | ca cag act gac cga gag G    |
| 150              | c gcc gcg gac acg gcA       |

Table 5-6

| <b>Probe No.</b> | <b>Base Sequence</b>       |
|------------------|----------------------------|
| 151              | ctg ctc tgg ggg gca G      |
| 152              | c cag agc gag gcc ggT      |
| 153              | c tcc gtg tcc cgg ccT      |
| 154              | cgc ggg tac cac cag C      |
| 155              | tg acc gag acc tgg gcT     |
| 156              | cag gag ggg ccg gag tT     |
| 157              | cga gag agc ctg cgg aC     |
| 158              | c acg gcg gct cag atc T    |
| 159              | cg gag cag ctg aga gcT     |
| 160              | gg ccc gac ggg cgc T       |
| 161              | cgc ggg cat gac cag tT     |
| 162              | cc atg tcc cgg ccc gT      |
| 163              | g acc gcg gcg gac acC      |
| 164              | c tgc gac gtg ggg ccC      |
| 165              | t ccg agg acg gag ccC      |
| 166              | gag ccc cgg gcg ccA        |
| 167              | cc gcg agt ccg agg aC      |
| 168              | cac atc atc cag agg atg tT |
| 169              | ca cag act tac cga gag aA  |
| 170              | c atg tac ggc tgc gac C    |
| 171              | ctg cgg aac ctg cgc gA     |
| 172              | cat gac cag tcc gcc tG     |
| 173              | c acc atc cag agg atg tC   |
| 174              | gac ctg agc tcc tgg acA    |
| 175              | cga gag agc ctg cgc aC     |
| 176              | g cag gag ggg ccg gG       |
| 177              | ga acc tac ctg gag ggc A   |
| 178              | a acc tac ctg gag ggc aT   |
| 179              | c tgg acc gcg gcg gaG      |
| 180              | ta gag cag gag ggg ccA     |

Table 5-7

| <b>Probe No.</b> | <b>Base Sequence</b>                                             |
|------------------|------------------------------------------------------------------|
| 181              | tct cac act tgg cag acG ( SEQ ID No: <u>182819</u> )             |
| 182              | g gcg gag cag cgg aga A ( SEQ ID No: <u>183820</u> )             |
| 183              | cg <sup>g</sup> ccc ggc cgc ggA ( SEQ ID No: <u>184821</u> )     |
| 184              | gg tct cac acc ctc caC ( SEQ ID No: <u>185822</u> )              |
| 185              | c cgc ggg tat aac cag ttA ( SEQ ID No: <u>186823</u> )           |
| 186              | g gcg gag cag tgg aga A ( SEQ ID No: <u>187824</u> )             |
| 187              | gaa tat tgg gac cgg gaG ( SEQ ID No: <u>188825</u> )             |
| 188              | g <sup>c</sup> g gct cag atc acc cG ( SEQ ID No: <u>189826</u> ) |
| 189              | cac acc ctc cag agc aC ( SEQ ID No: <u>190827</u> )              |
| 190              | ag tgg gag g <sup>c</sup> g gcc cT ( SEQ ID No: <u>191828</u> )  |
| 191              | g acc gag acc tgg gcG ( SEQ ID No: <u>192829</u> )               |
| 192              | c gcc acg agt ccg agg A ( SEQ ID No: <u>193830</u> )             |
| 193              | g atc tcc cag cgc aag tT ( SEQ ID No: <u>194831</u> )            |
| 194              | tg gag g <sup>c</sup> g gcc cgt gT ( SEQ ID No: <u>195832</u> )  |
| 195              | tg acc gag acc tgg gcl ( SEQ ID No: <u>196833</u> )              |
| 196              | g cgc tcc tgg acc gcG ( SEQ ID No: <u>197834</u> )               |
| 197              | ag ggc gag tgc gtg gaT ( SEQ ID No: <u>198835</u> )              |
| 198              | gg tat ttc cac acc gcc A ( SEQ ID No: <u>199836</u> )            |
| 199              | c cgc ggg cat aac cag A ( SEQ ID No: <u>200837</u> )             |
| 200              | ccg gag tat tgg gac cC ( SEQ ID No: <u>201838</u> )              |
| 201              | gg tct cac atc atc cag G ( SEQ ID No: <u>202839</u> )            |
| 202              | c gcc tac gac ggc aag A ( SEQ ID No: <u>203840</u> )             |
| 203              | cgc ggg cat aac cag tC ( SEQ ID No: <u>204841</u> )              |
| 204              | cc ggg tct cac act tgG ( SEQ ID No: <u>205842</u> )              |
| 205              | c act tgg cag agg atg taT ( SEQ ID No: <u>206843</u> )           |
| 206              | ga gag agc ctg cgg aaG ( SEQ ID No: <u>207844</u> )              |
| 207              | c ggg aag gac acg ctg C ( SEQ ID No: <u>208845</u> )             |
| 208              | c acg ctg cag cgc gcG ( SEQ ID No: <u>209846</u> )               |
| 209              | cc atc tct gac cat gag gT ( SEQ ID No: <u>210847</u> )           |
| 210              | cgg gag aca cag atc tcG ( SEQ ID No: <u>211848</u> )             |

Table 5-8

| <b>Probe No.</b> | <b>Base Sequence</b>                                                                                    |
|------------------|---------------------------------------------------------------------------------------------------------|
| 211              | g gag gcg gcc cgt gtC ( SEQ ID No: <u>212849</u> )                                                      |
| 212              | a gag aac ctg cgc acc G ( SEQ ID No: <u>213850</u> )                                                    |
| 213              | gg gag ccc cgc ttc atT ( SEQ ID No: <u>214851</u> )                                                     |
| 214              | ctg cgc acc ccg ctc C ( SEQ ID No: <u>215852</u> )                                                      |
| 215              | gg ccg gag tat tgg gaG ( SEQ ID No: <u>216853</u> )                                                     |
| 216              | c cgc ggg cat aac cag G ( SEQ ID No: <u>217854</u> )                                                    |
| 217              | ggc gag tgc gtg gag tC ( SEQ ID No: <u>218855</u> )                                                     |
| 218              | cg <sup>g</sup> gcg ccg tgg gtG ( SEQ ID No: <u>219856</u> )                                            |
| 219              | ga gag aac ctg cgg atc G ( SEQ ID No: <u>220857</u> )                                                   |
| 220              | gtg gac gac acg ctg ttG ( SEQ ID No: <u>221858</u> )                                                    |
| 221              | tg gag ggc ctg tgc gC ( SEQ ID No: <u>222859</u> )                                                      |
| 222              | gac ggc aag gat tac atc A ( SEQ ID No: <u>223860</u> )                                                  |
| 223              | c cgc ggg tat aac cag tT ( SEQ ID No: <u>224861</u> )                                                   |
| 224              | ctc cgc ggg tat aac cG ( SEQ ID No: <u>225862</u> )                                                     |
| 225              | g <sup>c</sup> g g <sup>c</sup> g c <sup>a</sup> g g <sup>a</sup> c aga gT ( SEQ ID No: <u>226863</u> ) |
| 226              | gag aca cag aag tac aag C ( SEQ ID No: <u>227864</u> )                                                  |
| 227              | cgc cag gca cag act gG ( SEQ ID No: <u>228865</u> )                                                     |
| 228              | t gtg gtc gct gct gtg G ( SEQ ID No: <u>229866</u> )                                                    |
| 229              | c ctg cgg aac ctg ctc C ( SEQ ID No: <u>230867</u> )                                                    |
| 230              | aga acc ttc cag aag tgg A ( SEQ ID No: <u>231868</u> )                                                  |
| 231              | ag ccc cgc ttc atc tcC ( SEQ ID No: <u>232869</u> )                                                     |
| 232              | c cgc ggg tat aac cag ttA ( SEQ ID No: <u>233870</u> )                                                  |
| 233              | ggc ctg tgc gtg gag G ( SEQ ID No: <u>234871</u> )                                                      |
| 234              | cgg atc g <sup>c</sup> g ctc cgc G ( SEQ ID No: <u>235872</u> )                                         |
| 235              | ttc gcc tac gac ggc aaA ( SEQ ID No: <u>236873</u> )                                                    |
| 236              | ctc ctc cgc ggg cat aaA ( SEQ ID No: <u>237874</u> )                                                    |
| 237              | g cgt ctc ctc cgc ggT ( SEQ ID No: <u>238875</u> )                                                      |
| 238              | c ggg cgc ctc ctc cC ( SEQ ID No: <u>239876</u> )                                                       |
| 239              | g agt ccg agg acg gag A ( SEQ ID No: <u>240877</u> )                                                    |
| 240              | ata gag cag gag ggg cG ( SEQ ID No: <u>241878</u> )                                                     |

Table 5-9

| <b>Probe No.</b> | <b>Base Sequence</b>                                   |
|------------------|--------------------------------------------------------|
| 241              | cc aga cca gca gga gat G ( SEQ ID No: <u>242879</u> )  |
| 242              | cag cat gag ggg ctg cT ( SEQ ID No: <u>243880</u> )    |
| 243              | cag act tac cga gag aac T ( SEQ ID No: <u>244881</u> ) |
| 244              | gc gac gcc gcg agt cA ( SEQ ID No: <u>245882</u> )     |
| 245              | c cgc ggg gag ccc cC ( SEQ ID No: <u>246883</u> )      |
| 246              | cga gag agc ctg cgg aT ( SEQ ID No: <u>247884</u> )    |
| 247              | gag agc ctg cgg atc gC ( SEQ ID No: <u>248885</u> )    |
| 248              | g gca cag act gac cga gT ( SEQ ID No: <u>249886</u> )  |
| 249              | g acc gcc gcg gac acc ( SEQ ID No: <u>250887</u> )     |
| 250              | g cag gag ggg ccg gC ( SEQ ID No: <u>251888</u> )      |
| 251              | cc gcg agt ccg aga gG ( SEQ ID No: <u>252889</u> )     |
| 252              | gg tct cac act tgg cag aT ( SEQ ID No: <u>253890</u> ) |
| 253              | acg gca ccc cga acc C ( SEQ ID No: <u>254891</u> )     |
| 254              | ctc ctc ctg ctg ctc tG ( SEQ ID No: <u>255892</u> )    |
| 255              | ag aca cag aag tac aag gG ( SEQ ID No: <u>256893</u> ) |
| 256              | gg tct cac atc atc cag gT ( SEQ ID No: <u>257894</u> ) |
| 257              | gc ggg cat gac cag tcT ( SEQ ID No: <u>258895</u> )    |
| 258              | g acc gcg gcg gac acA ( SEQ ID No: <u>259896</u> )     |
| 259              | g ccg gag tat tgg gac G ( SEQ ID No: <u>260897</u> )   |
| 260              | c ctc ctc cgc ggg tat A ( SEQ ID No: <u>261898</u> )   |
| 261              | c acg gcg gct cag atc aT ( SEQ ID No: <u>262899</u> )  |
| 262              | tg cgg atc gcg ctc cC ( SEQ ID No: <u>263900</u> )     |
| 263              | g ccg gag tat tgg gac gA ( SEQ ID No: <u>264901</u> )  |
| 264              | g gag gcg gcc cgt gC ( SEQ ID No: <u>265902</u> )      |
| 265              | c gac gcc gcg agt ccA ( SEQ ID No: <u>266903</u> )     |
| 266              | gtc acc gta gct gtg gtC ( SEQ ID No: <u>267904</u> )   |
| 267              | g tgt agg agg aag agt tcT ( SEQ ID No: <u>268905</u> ) |
| 268              | c aga gcc tac ctg gag gA ( SEQ ID No: <u>269906</u> )  |
| 269              | gtc atc gga gct gtg gtT ( SEQ ID No: <u>270907</u> )   |

Table 6-1

| <b>Probe No.</b> | <b>Base Sequence</b>                                    |
|------------------|---------------------------------------------------------|
| 0                | c acc tcc Gtg tcc cgg ( SEQ ID No: <u>271908</u> )      |
| 1                | c ctc cag agC atg tac gg ( SEQ ID No: <u>272909</u> )   |
| 2                | c cgc ggg Cat gac cag ( SEQ ID No: <u>273910</u> )      |
| 3                | cat gac cag Tac gcc tac ( SEQ ID No: <u>274911</u> )    |
| 4                | g gag cag cGg aga gcc ( SEQ ID No: <u>275912</u> )      |
| 5                | gag cag cgG aga gcc ta ( SEQ ID No: <u>276913</u> )     |
| 6                | g gag ggc gAg tgc gtg ( SEQ ID No: <u>277914</u> )      |
| 7                | c gtg gag tGg ctc cgc ( SEQ ID No: <u>278915</u> )      |
| 8                | ac aag ctg Gag cgc gct ( SEQ ID No: <u>279916</u> )     |
| 9                | ctc cgc agG tac ctg ga ( SEQ ID No: <u>280917</u> )     |
| 10               | g gac gac acG cag ttc gt ( SEQ ID No: <u>281918</u> )   |
| 11               | aag acc aac Aca cag act g ( SEQ ID No: <u>282919</u> )  |
| 12               | g gag cag gaC aga gcc ta ( SEQ ID No: <u>283920</u> )   |
| 13               | cgc ggg cat Aac cag tac ( SEQ ID No: <u>284921</u> )    |
| 14               | cag tcc acc Atc ccc atc ( SEQ ID No: <u>285922</u> )    |
| 15               | c ctc cag agG atg tac gg ( SEQ ID No: <u>286923</u> )   |
| 16               | aca cag atc tTc aag acc aa ( SEQ ID No: <u>287924</u> ) |
| 17               | t gac cag tCc gcc tac g ( SEQ ID No: <u>288925</u> )    |
| 18               | ca cag atc tGc aag gcc C ( SEQ ID No: <u>289926</u> )   |
| 19               | c cga gag aAc ctg cgg a ( SEQ ID No: <u>290927</u> )    |
| 20               | tct cac atc Atc cag agg a ( SEQ ID No: <u>291928</u> )  |
| 21               | g agg atg taT ggc tgc ga ( SEQ ID No: <u>292929</u> )   |
| 22               | c tgc gac Ctg ggg ccc ( SEQ ID No: <u>293930</u> )      |
| 23               | ctg ggg ccC gac ggg ( SEQ ID No: <u>294931</u> )        |
| 24               | g tac aag cGc cag gca c ( SEQ ID No: <u>295932</u> )    |
| 25               | ag gca cag Gct gac cga ( SEQ ID No: <u>296933</u> )     |
| 26               | t gac cga gTg agc ctg c ( SEQ ID No: <u>297934</u> )    |
| 27               | gg tct cac aTc atc cag ag ( SEQ ID No: <u>298935</u> )  |
| 28               | c atc cag agG atg tac gg ( SEQ ID No: <u>299936</u> )   |
| 29               | tc cgc ggg Tat gac cag ( SEQ ID No: <u>300937</u> )     |
| 30               | aag acc aac Aca cag act ta ( SEQ ID No: <u>301938</u> ) |

Table 6-2

| <b>Probe No.</b> | <b>Base Sequence</b>                                   |
|------------------|--------------------------------------------------------|
| 31               | aca cag act Tac cga gag a ( SEQ ID No: <u>302939</u> ) |
| 32               | g gag ggc aCg tgc gtg ( SEQ ID No: <u>303940</u> )     |
| 33               | ggg aag gaG acg ctg ga ( SEQ ID No: <u>304941</u> )    |
| 34               | g aag gag aCg ctg gag c ( SEQ ID No: <u>305942</u> )   |
| 35               | g gag ggc cTg tgc gtg ( SEQ ID No: <u>306943</u> )     |
| 36               | c gtg gag tCg ctc cgc ( SEQ ID No: <u>307944</u> )     |
| 37               | c ggg gag cTc cgc ttc ( SEQ ID No: <u>308945</u> )     |
| 38               | c gcc gcg Aac acg gcg ( SEQ ID No: <u>309946</u> )     |
| 39               | tg cgc ggc Cac tac aac ( SEQ ID No: <u>310947</u> )    |
| 40               | g gag ggc Ctg tgc gtg ( SEQ ID No: <u>311948</u> )     |
| 41               | g gcc cgt qTg gcg gag ( SEQ ID No: <u>312949</u> )     |
| 42               | g gag cag cTg aga gcc t ( SEQ ID No: <u>313950</u> )   |
| 43               | ca cag atc tCc aag acc aa ( SEQ ID No: <u>314951</u> ) |
| 44               | aca cag act Tac cga gag g ( SEQ ID No: <u>315952</u> ) |
| 45               | c cga gag Gac ctg cgg ( SEQ ID No: <u>316953</u> )     |
| 46               | cc ctg ctc Cgc tac tac ( SEQ ID No: <u>317954</u> )    |
| 47               | tat gac cag Gac gcc tac ( SEQ ID No: <u>318955</u> )   |
| 48               | agg tat ttc Gac acc gcc ( SEQ ID No: <u>319956</u> )   |
| 49               | c acc gcc Atg tcc cgg ( SEQ ID No: <u>320957</u> )     |
| 50               | gag ccg cCg gcg ccg ( SEQ ID No: <u>321958</u> )       |
| 51               | g gag ggc Acg tgc gtg ( SEQ ID No: <u>322959</u> )     |
| 52               | g agg aag agC tca ggt gg ( SEQ ID No: <u>323960</u> )  |
| 53               | cc gcg ctc Cgc tac tac ( SEQ ID No: <u>324961</u> )    |
| 54               | c ctg cgg aTc gcg ctc ( SEQ ID No: <u>325962</u> )     |
| 55               | g cgg atc gCg ctc cgc ( SEQ ID No: <u>326963</u> )     |
| 56               | tc gcg ctc Cgc tac tac ( SEQ ID No: <u>327964</u> )    |
| 57               | g aag gac aCg ctg gag c ( SEQ ID No: <u>328965</u> )   |
| 58               | ac aca cag aCc ttc aag ac ( SEQ ID No: <u>329966</u> ) |
| 59               | g acg atg taT ggc tgc ga ( SEQ ID No: <u>330967</u> )  |
| 60               | gg gac cgg Gac aca cag ( SEQ ID No: <u>331968</u> )    |
| 61               | ac cac cag Gac gcc tac ( SEQ ID No: <u>332969</u> )    |

Table 6-3

| <b>Probe No.</b> | <b>Base Sequence</b>                            |
|------------------|-------------------------------------------------|
| 62               | aac aca cag Gct gac cga ( SEQ ID No: 333970)    |
| 63               | gcc ctg ggC ttc tac cc ( SEQ ID No: 334971)     |
| 64               | c acc cag cTc aag tgg g ( SEQ ID No: 335972)    |
| 65               | ct tgg cag aCg atg tat gg ( SEQ ID No: 336973)  |
| 66               | t aac cag ttA gcc tac gac ( SEQ ID No: 337974)  |
| 67               | c tgc gac Ctg ggg ccg ( SEQ ID No: 338975)      |
| 68               | a tct tcc caA tcc acc gtc ( SEQ ID No: 339976)  |
| 69               | g aga gcc tGc ctg gag g ( SEQ ID No: 340977)    |
| 70               | acc ctc cag Tgg atg tat g ( SEQ ID No: 341978)  |
| 71               | a gca gga gaG aga acc ttc ( SEQ ID No: 342979)  |
| 72               | a tgg gag ccA tct tcc ca ( SEQ ID No: 343980)   |
| 73               | tc tac acc Gcc gtg tcc ( SEQ ID No: 344981)     |
| 74               | tcc atg agg Cat ttc tac ac ( SEQ ID No: 345982) |
| 75               | g ggg ccg gaA tat tgg ga ( SEQ ID No: 346983)   |
| 76               | tc cgc aga Cac ctg gag ( SEQ ID No: 347984)     |
| 77               | g acg ctg Cag cgc gcg ( SEQ ID No: 348985)      |
| 78               | ctc tcg ggA gcc ctg g ( SEQ ID No: 349986)      |
| 79               | cgg gcg ccA tgg ata ga ( SEQ ID No: 350987)     |
| 80               | g gac cgg gaG aca cag at ( SEQ ID No: 351988)   |
| 81               | cg gag cag Tgg aga gcc ( SEQ ID No: 352989)     |
| 82               | t cag gac accC gag ctt gt ( SEQ ID No: 353990)  |
| 83               | c gac ggc aaA gat tac atc ( SEQ ID No: 354991)  |
| 84               | tgg acc gcG gcg gac a ( SEQ ID No: 355992)      |
| 85               | c gcc ctg aaT gag gac ct ( SEQ ID No: 356993)   |
| 86               | cag ttc gtg Cgg ttc gac ( SEQ ID No: 357994)    |
| 87               | gtg gtc gct Act gtg atg ( SEQ ID No: 358995)    |
| 88               | ag agg atg tTt ggc tgc g ( SEQ ID No: 359996)   |
| 89               | ca cag atc tGc aag acc aa ( SEQ ID No: 360997)  |
| 90               | agg atg gcT ccc cgg g ( SEQ ID No: 361998)      |
| 91               | tgc gtg gaC ggg ctc c ( SEQ ID No: 362999)      |
| 92               | gc tcc cac tTc atg agg t ( SEQ ID No: 3631000)  |

Table 6-4

| <b>Probe No.</b> | <b>Base Sequence</b>                             |
|------------------|--------------------------------------------------|
| 93               | gcc tcc gcG cag act ta ( SEQ ID No: 3641001)     |
| 94               | tg gtg gtg cTt tct gga g ( SEQ ID No: 3651002)   |
| 95               | ac cac ccc Gtc tct gac ( SEQ ID No: 3661003)     |
| 96               | ac cgg gag aTa cag atc tc ( SEQ ID No: 3671004)  |
| 97               | g agg atg gCg ccc cgg ( SEQ ID No: 3681005)      |
| 98               | g agg atg tCt ggc tgc g ( SEQ ID No: 3691006)    |
| 99               | c gcg gac aAg gcg gct ( SEQ ID No: 3701007)      |
| 100              | cc ctc cag aCg atg tac g ( SEQ ID No: 3711008)   |
| 101              | c ctc cag acG atg tac gg ( SEQ ID No: 3721009)   |
| 102              | aac ctg cgC acc gcg c ( SEQ ID No: 3731010)      |
| 103              | ag gac ctg Agc tcc tgg ( SEQ ID No: 3741011)     |
| 104              | gc ttc atc Gca gtg ggc ( SEQ ID No: 3751012)     |
| 105              | atg gcg ccC cgg gcg ( SEQ ID No: 3761013)        |
| 106              | c gac gcc Acg agt ccg ( SEQ ID No: 3771014)      |
| 107              | cag ctg aga Acc tac ctg ( SEQ ID No: 3781015)    |
| 108              | cc aac aca cGg act tac c ( SEQ ID No: 3791016)   |
| 109              | ggg aag gaG acg ctg ca ( SEQ ID No: 3801017)     |
| 110              | ac gac acg cTg ttc gtg a ( SEQ ID No: 3811018)   |
| 111              | ct tac cga gTg aac ctg c ( SEQ ID No: 3821019)   |
| 112              | c cga gtg aAc ctg cgg a ( SEQ ID No: 3831020)    |
| 113              | at aac cag tTc gcc tac ga ( SEQ ID No: 3841021)  |
| 114              | gtg agg ttc Aac agc gac ( SEQ ID No: 3851022)    |
| 115              | c acc cag cAc aag tgg g ( SEQ ID No: 3861023)    |
| 116              | cg gag cag cig aga acc t ( SEQ ID No: 3871024)   |
| 117              | agg tat ttc Cac acc tcc g ( SEQ ID No: 3881025)  |
| 118              | a aag aca caT gtg acc cac ( SEQ ID No: 3891026)  |
| 119              | atc tcc aag aTc aac aca ca ( SEQ ID No: 3901027) |
| 120              | g gcc cgt Cag gcg gag ( SEQ ID No: 3911028)      |
| 121              | g ata gag caA gag ggg cc ( SEQ ID No: 3921029)   |
| 122              | cag act tac Aga gag agc c ( SEQ ID No: 3931030)  |
| 123              | g aat atg taT ggc tgc gac ( SEQ ID No: 3941031)  |

Table 6-5

| <b>Probe No.</b> | <b>Base Sequence</b>                                    |
|------------------|---------------------------------------------------------|
| 124              | cgc ttc att Gca gtg ggc ( SEQ ID No: <u>3951032</u> )   |
| 125              | gcc ctg aaG gag gac ct ( SEQ ID No: <u>3961033</u> )    |
| 126              | ct tac cga gTg agc ctg c ( SEQ ID No: <u>3971034</u> )  |
| 127              | g agg atg tGc ggc tgc g ( SEQ ID No: <u>3981035</u> )   |
| 128              | g ata gag caA gag ggg cc ( SEQ ID No: <u>3991036</u> )  |
| 129              | ca cag atc tGc aag gcc a ( SEQ ID No: <u>4001037</u> )  |
| 130              | c ctg cgc aCc gcg ctc ( SEQ ID No: <u>4011038</u> )     |
| 131              | cgc acc gCg ctc cgc ( SEQ ID No: <u>4021039</u> )       |
| 132              | c ctc cag aaT atg tat ggc ( SEQ ID No: <u>4031040</u> ) |
| 133              | gg ccc gag Cat tgg gac ( SEQ ID No: <u>4041041</u> )    |
| 134              | tc tac cct gGg gag atc a ( SEQ ID No: <u>4051042</u> )  |
| 135              | g gac acg gcA gct cag at ( SEQ ID No: <u>4061043</u> )  |
| 136              | g ggg gca Gtg gcc ctg ( SEQ ID No: <u>4071044</u> )     |
| 137              | gag gcc ggT tct cac ac ( SEQ ID No: <u>4081045</u> )    |
| 138              | tcc cgg ccT ggc cgc ( SEQ ID No: <u>4091046</u> )       |
| 139              | ac cac cag Cac gcc tac ( SEQ ID No: <u>4101047</u> )    |
| 140              | acc tgg gcT ggc tcc c ( SEQ ID No: <u>4111048</u> )     |
| 141              | g gtc acg gAg ccc cga ( SEQ ID No: <u>4121049</u> )     |
| 142              | g ccc gag tTt tgg gac c ( SEQ ID No: <u>4131050</u> )   |
| 143              | c ctc cag aaT atg tac ggc ( SEQ ID No: <u>4141051</u> ) |
| 144              | C ctg cgg aCc ctg ctc ( SEQ ID No: <u>4151052</u> )     |
| 145              | ct cag atc Tcc cag cgc ( SEQ ID No: <u>4161053</u> )    |
| 146              | g ctg aga gcT tac ctg ga ( SEQ ID No: <u>4171054</u> )  |
| 147              | c ggg cgc Ttc ctc cgc ( SEQ ID No: <u>4181055</u> )     |
| 148              | at gac cag tTc gcc tac g ( SEQ ID No: <u>4191056</u> )  |
| 149              | cgc ggg cat Aac cag ttc ( SEQ ID No: <u>4201057</u> )   |
| 150              | cgg ccc gTc cgc ggg ( SEQ ID No: <u>4211058</u> )       |
| 151              | gcg gac acC gcg gct c ( SEQ ID No: <u>4221059</u> )     |
| 152              | tct cac atc Atc cag agc a ( SEQ ID No: <u>4231060</u> ) |
| 153              | gtg ggg ccC gac ggg ( SEQ ID No: <u>4241061</u> )       |
| 154              | acg gag ccC cgg gcg ( SEQ ID No: <u>4251062</u> )       |

Table 6-6

| <b>Probe No.</b> | <b>Base Sequence</b>       |
|------------------|----------------------------|
| 155              | t ccg agg aCg gag ccc      |
| 156              | ac ctg cgc gAc tac tac a   |
| 157              | g tcc gcc tGc gac ggc      |
| 158              | tcc tgg acA gcg gcg g      |
| 159              | c cga gag aAc ctg cgc a    |
| 160              | g ggg ccg gGa tat tgg g    |
| 161              | tg gag ggc Atg tgc gtg     |
| 162              | g gag ggc aTg tgc gtg g    |
| 163              | gcg gcg gaG acc gcg        |
| 164              | g gag ggg ccA gaa tat tg   |
| 165              | ct tgg cag acG atg tac g   |
| 166              | t tgg cag acG atg tac gg   |
| 167              | cag cgg aga Acc tac ctg    |
| 168              | ggc cgc ggA gag ccc        |
| 169              | c acc ctc caC agg atg ta   |
| 170              | cg gag cag Tgg aga acc     |
| 171              | cag tgg aga Acc tac ctg    |
| 172              | g atc acc cGg cgc aag t    |
| 173              | c cag agc aCg tac ggc t    |
| 174              | g gcg gcc cTt gtg gcg      |
| 175              | acc tgg gcG ggc tcc c      |
| 176              | gtc acg gcA ccc cga ac     |
| 177              | agg tat ttc Cac acc gcc    |
| 178              | gt ccg agg Aag gag ccg     |
| 179              | g cgc aag tTg gag gcg g    |
| 180              | acc tgg gcT ggc tcc c      |
| 181              | tgc gtg gaT tgg ctc cg     |
| 182              | cat aac cag Aac gcc tac g  |
| 183              | t tgg gac cCg gag aca c    |
| 184              | atc atc cag Gtg atg tat gg |
| 185              | gac ggc aag Aat tac atc g  |

Table 6-7

| <b>Probe No.</b> | <b>Base Sequence</b>      |
|------------------|---------------------------|
| 186              | at aac cag tCc gcc tac g  |
| 187              | ctg cgg aaG ctg cgc g     |
| 188              | t cac act tgG cag agg atg |
| 189              | c acg ctg Cag cgc gcg     |
| 190              | ac cat gag gTc acc ctg a  |
| 191              | a cag atc tcG aag acc aac |
| 192              | gcc cgt gtc gcg gag c     |
| 193              | g cgc acc Gcg ctc cg      |
| 194              | c cgc ttc atT gca gtg gg  |
| 195              | c ctg cgc aCc ccg ctc     |
| 196              | cc ccg ctc Cgc tac tac    |
| 197              | g tat tgg gaG cgg gag ac  |
| 198              | gc ggg cat Aac cag gac    |
| 199              | cat aac cag Gac gcc tac   |
| 200              | ctc cgc ggg Tat aac cag   |
| 201              | ccg tgg gtG gag cag g     |
| 202              | g cgg atc Gcg ctc cgc     |
| 203              | c acg ctg ttG gtg agg tt  |
| 204              | c ctg tgc gCg gag tcg     |
| 205              | gat tac atc Acc ctg aac g |
| 206              | gg tat aac cGg tta gcc ta |
| 207              | ag gac aga gTc tac ctg g  |
| 208              | aag tac aag Cgc cag gca   |
| 209              | ca cag act gGc cga gtg a  |
| 210              | gct gct gtg Gtg tgt agg   |
| 211              | aac ctg ctc Cgc tac tac   |
| 212              | cag aag tgg Aca gct gtg   |
| 213              | cag cgc gcG gac ccc       |
| 214              | c ttc atc tcC gtg ggc ta  |
| 215              | c gtg gag Ggg ctc cgc     |
| 216              | cg ctc cgc Gac tac aac    |

Table 6-8

| <b>Probe No.</b> | <b>Base Sequence</b>                                    |
|------------------|---------------------------------------------------------|
| 217              | c ggg cat aaA cag tac gc ( SEQ ID No: <u>4881125</u> )  |
| 218              | c ctc cgc ggT tat aac ca ( SEQ ID No: <u>4891126</u> )  |
| 219              | c ctc ctc cCc ggg cat ( SEQ ID No: <u>4901127</u> )     |
| 220              | g acg gag Acc cgg gcg ( SEQ ID No: <u>4911128</u> )     |
| 221              | g gag ggg cGg gag tat t ( SEQ ID No: <u>4921129</u> )   |
| 222              | gca gga gat Gga acc ttc ( SEQ ID No: <u>4931130</u> )   |
| 223              | g ggg ctg cTg aag ccc ( SEQ ID No: <u>4941131</u> )     |
| 224              | cgG gtc aCg gcg ccc ( SEQ ID No: <u>4951132</u> )       |
| 225              | t ccg agg aCg gag ccg ( SEQ ID No: <u>4961133</u> )     |
| 226              | cga gag aac Ttg cgg atc ( SEQ ID No: <u>4971134</u> )   |
| 227              | c gcg agt cAg agg acg g ( SEQ ID No: <u>4981135</u> )   |
| 228              | g gag ccc cCc ttc atc g ( SEQ ID No: <u>4991136</u> )   |
| 229              | g ggg ccg gCg tat tgg ( SEQ ID No: <u>5001137</u> )     |
| 230              | t ccg aga gGg gag ccg ( SEQ ID No: <u>5011138</u> )     |
| 231              | ct tgg cag aTg atg tat gg ( SEQ ID No: <u>5021139</u> ) |
| 232              | g tac aag gGc cag gca c ( SEQ ID No: <u>5031140</u> )   |
| 233              | tc atc cag gTg atg tat gg ( SEQ ID No: <u>5041141</u> ) |
| 234              | t gac cag tcT gcc tac ga ( SEQ ID No: <u>5051142</u> )  |
| 235              | gCG gac acA gCG gCT c ( SEQ ID No: <u>5061143</u> )     |
| 236              | tat tgg gac Ggg gag aca ( SEQ ID No: <u>5071144</u> )   |
| 237              | cgc ggg tat Aac cag tac ( SEQ ID No: <u>5081145</u> )   |
| 238              | ct cag atc aTc cag cgc a ( SEQ ID No: <u>5091146</u> )  |
| 239              | c gCG ctc cCc tac tac a ( SEQ ID No: <u>5101147</u> )   |
| 240              | at tgg gac gAg gag aca c ( SEQ ID No: <u>5111148</u> )  |
| 241              | GCC cgt gCg gCG gag ( SEQ ID No: <u>5121149</u> )       |
| 242              | g aag gag aCg ctg cag c ( SEQ ID No: <u>5131150</u> )   |
| 243              | gCG agt ccA aga ggg ga ( SEQ ID No: <u>5141151</u> )    |
| 244              | gCT gtG gtC gCT gtG gt ( SEQ ID No: <u>5151152</u> )    |
| 245              | c ctG gag gAc ctG tGc g ( SEQ ID No: <u>5161153</u> )   |
| 246              | a gCT gtG gtT gCT act gtG ( SEQ ID No: <u>5171154</u> ) |

Table 7

## Allele-Probe List 1

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B\*5510 65 59 67 66 41 32  
5 B\*5511 231 32 77  
B\*5512 176 19 41 32 87 52  
B\*5601 176 59 41 42 35 87 52  
B\*5602 176 41 42 35 87 52  
B\*5603 176 81 82 87 52  
10 B\*5604 104 10 66 41 42 35  
B\*5605 194 10 65 59 83 103 42 35 76  
B\*5606 194 155 79 65 59 83 103 42 35 76  
B\*5607 10 130 53 65 59 67 66 41 42 35  
B\*5608 232 42 35 77  
15 B\*5609 104 10 20 21 22 23 17 103 151 41 42 35 77  
B\*5610 49 104 10 67 66 41 32  
B\*5611 176 23 151 41 42 35 77 63  
B\*570101 233 17 42 68  
B\*570102 234  
20 B\*5702 13 68  
B\*570301 13 42 68  
B\*570302 235  
B\*5704 184 47 41 77  
B\*5705 236 200 237 41 35  
25 B\*5706 238  
B\*5707 184 36 77  
B\*5708 239

B\*5709 184 12 77  
B\*5801 236 20 87 52  
B\*5802 70 52  
B\*5804 240  
5 B\*5805 241  
B\*5806 70 35  
B\*5807 70 36  
B\*5901 176 56 41 32 87 52  
B\*670101 75 15 116 107 71 72  
10 B\*670102 15 149 113 41 116 107 32 242  
B\*6702 243  
B\*7301 244  
B\*7801 194 16 65 42 76 95 52  
B\*780201 16 31 65 42 76 95 52  
15 B\*780202 194 79 16 31 65 59 83 103 42 35 76  
B\*7803 194 89 11 65 59 83 103 42 35 76  
B\*7804 83 103 41 42 35 95  
B\*7805 155 154 80 43 31 65 59 83 42 35 76  
B\*8101 136 212  
20 B\*8201 245  
B\*8202 246  
B\*8301 136 49 20 29 47 12 35 36 77

## (Example 5)

Probes for identification of HLA-C allele

Extraction of DNA from 1 ml of human blood was performed using GFX Genomic Blood DNA Purification 5 Kit from Amersham Biosciences in the same manner as in Example 1.

Next, quantitative PCR was carried out in the same manner as in Example 1 except that probes in the probe list in Tables 9-1 to 9-4 were used 10 respectively, and 3 µl of the mixed primers consisting of 1 µl each of the respective solutions of the following primers (10 pmol/µl) was used:  
AAACACGGTCACCTCAGGGGGAT (SEQ ID NO: 3401992)  
GGCCTGAGTGTGGTTGGAACG (SEQ ID NO: 3411993)  
15 CCAGCTCGTAGTTGTCTGCA (SEQ ID NO: 3421994).

After PCR amplification, the sample was identified being Cw\*120202, referring to Amp Plot and Dissociation curves on a display of 5700 software and the allele-probe list in Tables 11-1 to 11-4.

## 20 (Example 6)

Extraction of DNA from 1 ml of human blood was performed in the same manner as in Example 1. PCR of human HLA-C was then performed in the same manner as in Example 2 except that 6 µl of the mixed primer 25 consisting of 1 µl each of the solutions containing the following sequences at 10 pmol/µl respectively and 9 µl of ultra pure water was used.

AAACACGGTCACCTCAGGGGGAT (SEQ ID NO: 3401992)  
 GGCCTGAGTGTGGTTGGAACG (SEQ ID NO: 3411993)  
 CCAGCTCGTAGTTGTCTGCA (SEQ ID NO: 3421994)  
 CCATGTGTCAACTTATGCC (SEQ ID NO: 3431995)  
 5 AGAATTACCTTTCCAG (SEQ ID NO: 3441996)  
 AGAATTACGTTTCCAG (SEQ ID NO: 3451997)  
 At the same time, a DNA microarray was prepared  
 to identify the allele in the specimen in the same  
 manner as in Example 2. Probes in Tables 10-1 to 10-  
 10 4 were used for the probe spots respectively.  
 Then, hybridization and fluorescence  
 determination was performed using the above-prepared  
 sample and the DNA microarray in the same manner as  
 in Example 2 and the sample was identified as  
 15 Cw\*120202 referring to the probe-allele list in  
 Tables 12-1 to 12-4.

Allele list

Cw\*0102 :

20 atgcgggtcatggcgccccgaaccctcatcctgctgctctcgagccctggccctgaccgagacctggcctgct  
 cccactccatgaagtatttcttacatccgtgtcccgccctggccgcggagagcccccgttcatctcagtggcta  
 cgtggacacacgcagttcggttcgacagcgcacgcgcgcgagtcggagagggagccgcggccgtggtg  
 gagcaggagggccggagtattggaccggagacacagaagtacaagcgcaggcacagactgaccgagtgagcc  
 tgccgaacctgcgcggctactacaaccagagcggaggccgggtctcacaccctccagtgatgtGtggctgcac  
 25 gggcccgacggcgccctcccgccgtatgaccagtAgcctacgcggcaaggattacatccctgaacgag  
 gacctgcgctcctggaccggccgacacCgcggctcagatcacccagcgcaagtggaggccgcgtgaggccg  
 agcaggcggagagcctacctggagggcacgtgcgtggagtggctccgcagatacctggagaacggaaaggagacgct

gcagcgccggAACACCCAAAGACACACGTGACCCACCATCCGTCTGACCATGAGGCCACCTGAGGTGCTGG  
 GCCCTGGGCTTCTACCCCTGCGGAGATCACACTGACCTGGCAGTGGATGGGGAGGACAAACTCAGGACACCGAGC  
 TTGAGACCAGGCCAGCAGGAGATGGAACCTTCAGAAGTGGCAGTGTGAtgggccttggagaagaca  
 gagatacacgtgccatgtcagcacgagggtgcggagccccctcaccctgagatggagccgtttcccagccc  
 5 accatccccatcgtggcatcgttgctggcctggctgtcctggctgtccatgtccttaggagctgtggctg  
 ttgtatgttaggaggaagagactcaggtggaaaaggagggagctgcttcaggctgcgtccagcaacagtgc  
 gggctctgatgagtcctcatcgctttaa (SEQ ID NO:11653) ;  
 Cw\*0103 :  
 atgcgggtcatggccccgaaccctcatcctgtctcggtggccctggccctgaccgagacctggcctgt  
 10 cccactccatgaagtattcttacatccgtgtccggcctggccgcggagagcccccttcatctcagtggcta  
 cgtggacgacacgcagttcgtcggttcgacagcgcacgcgcgcgagtcggagagggagccgcggccgtgggt  
 gagcaggagggccggagtattggaccggagacacagaagtacaagcgcaggcacagactgaccgagtgagcc  
 tgcggAACCTGCGCGCTACTACAACCAGAGCGAGGCCGGTCTCACACCCCTCCAGTGGATGTGGCTGCACCT  
 gggccgcacgggcgcctcccggtatAccagttcgccctacgcggcaaggattacatccctgaacgag  
 15 gacctgcgtcctggaccgcgcggacaccgcggctcagatcacccagcgcaagtggaggccggccgtgaggcgg  
 agcagcggagagccctacctggggcacgtgcgtggagtggctccgcagataccctggagaacggaaaggagacgc  
 gcagcgcgcggAACACCCAAAGACACACGTGACCCACCATCCGTCTGACCATGAGGCCACCTGAGGTGCTGG  
 GCCCTGGGCTTCTACCCCTGCGGAGATCACACTGACCTGGCAGTGGATGGGGAGGACAAACTCAGGACACCGAGC  
 TTGAGACCAGGCCAGCAGGAGATGGAACCTTCAGAAGTGGCAGTGTGAtgggccttggagaagaca  
 gagatacacgtgccatgtcagcacgagggtgcggagccccctcaccctgagatggagccgtttcccagccc  
 20 accatccccatcgtggcatcgttgctggcctggctgtcctggctgtccatgtccttaggagctgtggctg  
 ttgtatgttaggaggaagagactcaggtggaaaaggagggagctgcttcaggctgcgtccagcaacagtgc  
 gggctctgatgagtcctcatcgctttaa (SEQ ID NO:21654) ;  
 Cw\*0104 :  
 atgcgggtcatggccccgaaccctcatcctgtctcggtggccctggccctgaccgagacctggcctgt  
 25 cccactccatgaagtattcttacatccgtgtccggcctggccgcggagagcccccttcatctcagtggcta  
 cgtggacgacacgcagttcgtcggttcgacagcgcacgcgcgcgagtcggagagggagccgcggccgtgggt

gagcaggagggccggagtattggaccggagacacaagaatcacaaggccaggcacagactgaccgagtgagcc  
 tgcgaaacctgcgcggctactacaaccagagcgaggccgggtctcacaccctccagtgatgtggctgcac  
 gggcccgacgggcgcctctcccggtatgaccagtccgcctacgacggcaaggattacatccctgaac  
 gacctgcgctctggaccgcTgoggacacggcgctcagatcacccagcgcaagtggaggccggccgtgaggcgg  
 5 agcagtggagagcctacctggagggcacgtgcgtggagtggctccgcagataccctggagaacggaaaggagacgc  
 gcagcgcgcgaaacacccaaagacacacgtgaccaccatcccgctctgaccatgaggccaccctgaggtgctgg  
 gccctggcttctaccctcgccgagatcacactgacccctggcagccggatggcaggacaaactcaggacaccgagc  
 ttgtggagaccaggccagcaggagatggaaccctccagaagtggcagctgtgggtgccttctggagaagagca  
 gagatacacgtgccatgtgcagcacgaggccgtgccAgagccctcacccctgagatggagccatttcccagccc  
 10 accatccccatcgtggcatcgttgcgtggctggctgtccctggctgtcctagctgtcttaggagctgtgAtggctg  
 ttgtgatgttaggaggaagagctcaggtggaaaaggagggagctgcttcaggctgcgtccagcaacagtgc  
 ggcctctgatgagtctctatcgctttaa (SEQ ID NO:21655) ;

Cw\*0105 :

gctcccaactccatgaagtattttcacatccgtgtcccgccctggccggagagccccgcttcatctcagtgg  
 15 ctacgtggacgacacgcagttcgtgcggttcgacagcgacgcgcgactccggatccgagagggagccgcggccgtgg  
 gtggagcaggagggccggatattggaccggagacacagaagtacaagcgccaggcacagactgaccgagtga  
 gcctgcggAACCTGCGCGCTactacaaccagagcgaggccgggtctcacaccctccagaggatgtCtgctgcga  
 cctggggcccgacgggcgcctcccgccggatgaccagtacgcctacgacggcaaggattacatccctgaac  
 gaggacctgcgctccctggaccgcgcggacaccgcggctcagatcacccagcgcaagtggaggccggccgtgagg  
 20 cgaggacagcgaggagccatctggagggcacgtgcgtggagtggctccgcagataccctggagaacggaaaggagac  
 gctgcagcgcg (SEQ ID NO:41656) ;

Cw\*0106 :

gctcccaactccatgaagtattttcacatccgtgtcccgccctggccggagagccccgcttcatctcagtgg  
 15 ctacgtggacgacacgcagttcgtgcggttcgacagcgacgcgcgactccggatccgagagggagccgcggccgtgg  
 gtggagcaggagggccggatattggaccggagacacagaagtacaagcgccaggcacagactgaccgagtga  
 gcctgcggAACCTGCGCGCTactacaaccagagcgaggccgggtctcacaccctccagtgatgtggctgcga  
 cctggggcccgacgggcgcctcccgccggatgaccagtacgcctacgacggcaaggattacatccctgaac

gaggacactgcgtcctggaccgcgcggacaccgcggctcagatcacccagcgcaagtggaggccccgtgTgg  
 cggagcagcgagagcctacctggagggcacgtgcgtggagtggctccgcagatacctggagaacgggaaggagac  
 gtcgcagcgccgg (SEQ ID NO:51657) ;

Cw\*0107 :

5 gctcccaactccatgaagtattttcacatccgtgtcccgccctggccgcggagagccccgcttcatctcagtgg  
 ctacgtggacgacacgcagttcgtgcggttcgacagcgacgcgcgactccgagagggagccgcggccgtgg  
 gtggagcaggagggccggagtattgggaccggagacacagaagtacaagcgccaggcacagactgaccgagtga  
 gcctgcggAACCTGCGCGGCTACTACAACCAGAGCGAGGCCGGGTCTCACACCCCTCCAGTGGATGTGGCTGC  
 GCGCTGGGGCCGACGGGCGCCTCCCGCAGGTATGACCGAGTACGCCTACGACGGCAAGGATTACATGCCCTGAAC  
 10 gaggacactgcgtcctggaccgcgcggacaccgcggctcagatcacccagcgcaagtggaggccccgtgagg  
 cggagcagcgagagcctacctggagggcacgtgcgtggagtggctccgcagatacctggagaacgggaaggagac  
 gtcgcagcgccgg (SEQ ID NO:61658) ;

Cw\*0108 :

gctcccaactccatgaagtattttcacatccgtgtcccgccctggccgcggagagccccgcttcatctcagtgg  
 15 ctacgtggacgacacgcagttcgtgcggttcgacagcgacgcgcgactccgagagggagccgcggccgtgg  
 gtggagcaggagggccggagtattgggaccggagacacagaagtacaagcgccaggcacagactgaccgagtga  
 gcctgcggAACCTGCGCGGCTACTACAACCAGAGCGAGGCCGGGTCTCACACCCCTCCAGTGGATGTGGCTGC  
 GCGCTGGGGCCGACGGGCGCCTCCCGCAGGTATGACCGAGTACGCCTACGACGGCAAGGATTACATGCCCTGAAC  
 gaggacactgcgtcctggaccgcgcggacaccgcggctcagatcacccagcgcaagtggaggccccgtgagg  
 20 cgagcagcgagagcctacctggagggcacgtgcgtggagtggctccgcagatacctggagaacgggaaggagac  
 gtcgcagcgccgg (SEQ ID NO:71659) ;

Cw\*0109 :

gctcccaactccatgaagtattttcacatccgtgtcccgccctggccgcggagagccccgcttcatctcagtgg  
 ctacgtggacgacacgcagttcgtgcggttcgacagcgacgcgcgactccgagagggagccgcggccgtgg  
 25 gtggagcaggagggccggagtattgggaccggagacacagaagtacaagcgccaggcacagactgaccgagtga  
 gcctgcggAACCTGCGCGGCTACTACAACCAGAGCGAGGCCGGGTCTCACACCCCTCCAGTGGATGTGGCTGC  
 GCGCTGGGGCCGACGGGCGCCTCCCGCAGGTATGACCGAGTACGCCTACGACGGCAAGGATTACATGCCCTGAAC

gaggacactgcgtcctggaccgcgcggacaccgcggctcagatcacccagcgcaagtggaggccccgtgagg  
 cggagcagTggagagcctacctggagggcacgtgcgtggagtggctccgcagatacctggagaacgggaaggagac  
 gtcgcagcgccgg (SEQ ID NO:81660) ;

Cw\*020201 :

5 atgcgggtcatggcgccccgaaccctcctcgtgcgtctcggagccctggccctgaccgagacactggcctgct  
 cccactccatgaggtatttctacaccgcgtgtcccggccagccgcggagagcccccacttcatgcagtggcta  
 cgtggacgacacgcagttcgtgcgggtcgacagcgcacgcgcgcgagtcgaagagggagccgcggccgtgggt  
 gagcaggagggccggagtattggaccggagacacagaagtacaagcgcaggcacagactgaccgagtgaacc  
 tgcggaaactAcgccgctactacaaccagagcggccgggtctcacaccctccagaggatgtacggctgcac  
 10 gggcccgacggcgccctccgcgggtatgaccagtccgcctacgcggcaaggattacatccctgaacgag  
 gacctgcgtcctggaccgcgcggacacagcggctcagatcacccagcgcaagtggaggccggccgtgaggcgg  
 agcagtggagagcctacctggagggcgagtgcgtggagtggctccgcagatacctggagaacggaaaggagac  
 gcgcagcgcgcggaacacccaaagacacacgtgaccaccatccgtctgaccatgaggccaccctgaggtgctgg  
 gccctggcttctaccctacggagatcacactgacctggcagcggatggcgaggaccactcaggacaccgagc  
 15 ttgtggagaccaggccagcaggagatggaaccctccagaagtggcagctgtgggtgccttctggagaagaga  
 gagatacacgtgccatgtcagcacgcgggtgcggagccctcacctgagatggagccatttccagcc  
 accatccccatcgtggcatcgttgcgtgcctggctgtcctggctgtccatgtccttaggagctgtggctg  
 ttgtatgttaggaggaagagactcaggtggaaaaggagggagctgcttcaggctgcgtccagcaacagtgc  
 gggctctgatgagttctcatcgctttaa (SEQ ID NO:91661) ;

20 Cw\*020202 :

atgcgggtcatggcgccccgaaccctcctcgtgcgtctcggagccctggccctgaccgagacactggcctgct  
 cccactccatgaggtatttctacaccgcgtgtcccggccagccgcggagagcccccacttcatgcagtggcta  
 cgtggacgacacgcagttcgtgcgggtcgacagcgcacgcgcgcgagtcgaagagggagccgcggccgtgggt  
 gagcaggagggccggagtattggaccggagacacagaagtacaagcgcaggcacagactgaccgagtgaacc  
 25 tgcggaaactgcgcggctactacaaccagagcggccgggtctcacaccctccagaggatgtacggctgcac  
 gggcccgacggcgccctccgcgggtatgaccagtccgcctacgcggcaaggattacatccctgaacgag  
 gacctgcgtcctggaccgcgcggacacagcggctcagatcacccagcgcaagtggaggccggccgtgaggcgg

agcagtggagagcc tac tggaggcgagtgcgtggagtggctccg cagatac tggagaac ggg aagg gagac gct  
 gcagcgcgc ggaac acc cca aag acac acac gtgacc caccatcccgtctgaccatgaggccaccctgagg tgct gg  
 gccctggcttctaccct A cggagatcacactgacctggcagcgggatggcaggacaaactcaggacaccgagc  
 ttgtggagaccaggccagcaggagatggaaccc tccaga aactggcagctgtggtggtgccttctggagaagaga  
 5 gagatac acgtgccatgtgc agc acgagg gctg cggagccccctcaccctgagatgggagccatttcc cagccc  
 accatccccatcgtggcatcg ttgctggc tggctgtcctggctgtcc tagctgtccttaggagctgtggtgctg  
 ttgtgatgtgtaggaggaagagctcagg tggaaaaggaggagctgctcaggctgcgtccagcaac agtgc cca  
 gggctctgatgag tctcatcgctt gtaa (SEQ ID NO: 101662) ;  
 Cw\*020203 :  
 10 gctccca ctccatgagg tatttctacaccgctgtgtcccgccca gcccacttcatcg cagtgg  
 ctacgtggac gacac gca gtc agttcgtgc ggtt cga cagc gac gccc gca gatcca aagg gggagcc gggcc gctgg  
 gtggagcaggagg gggccggat tattgggaccggag aca gaga aactaca a gccc gca gggat gatggctgcga  
 acctgcggaa actgcgcggctactaca acca a cagg a ggc gaggccgg tctcac accctcc a gggat gatggctgcga  
 cctggggccgacggcgcctcc tccgcgg t atgacc agtccgcctac gacggcaaggattacatcgccctgaac  
 15 gaggac ctgc gctcc tggaccgc cgcggac acA g cggctc agatc accc a cgc a gttggaggccggctgagg  
 cg gagg cag Tggagagcctac tggagg ggc gatgcgtggatggctccgc a gatac tggaga acggga aggagac  
 gctgcagcgc ggg (SEQ ID NO: 111663) ;  
 Cw\*020204 :  
 atgcgggtcatggc cccca acccctccctgtgtctcg gaggccctggccctgaccgagac ctggccctgct  
 20 cccactccatgagg tatttctacaccgctgtgtcccgccca Agccgcggag a gcccacttcatcg cagtggctga  
 cgtggac gacac gca gtc agttcgtgc ggtt cga cagc gac gccc gca gatcca aagg gggagcc gggcc gctgg  
 gagcaggagg gggccggat tattgggaccggag aca gaga aactaca a gccc gca gggat gatggctgcga  
 tgcggaa actgcgcggctactaca acca a cagg a ggc gaggccgg tctcac accctcc a gggat gatggctgcga  
 gggcccgacggcgcctcc tccgcgg t atgacc agtccgcctac gacggcaaggattacatcgccctgaac gag  
 25 gac ctgc gctcc tggaccgc cgcggac acG g cggctc agatc accc a cgc a gttggaggccggctgagg cgg  
 agcagtggagagcctac tggagg ggc gatgcgtggatggctccgc a gatac tggaga acggga aggagac gct  
 gcagcgcgc ggaac acc cca aag acac acac gtgacc caccatcccgtctgaccatgaggccaccctgagg tgct gg

gccctggcttctaccctcgaggatcacactgacactggcagcggatggcgaggacaaactcaggacaccgagc  
 ttgtggagaccaggccagcaggagatggaaccttcagaagtggcagctgtgggtgcctctggagaagagca  
 gagatacacgtgccatgtcagcacgaggggctgcggagccccctcaccctgagatgggagccAtctcccagccc  
 accatccccatcgtggcatcggtgctggctgtcctggctgtccatgtcttaggagctgtggctg  
 5       ttgtgatgttaggagaaagagctcag (SEQ ID NO:121664) ;  
 Cw\*020205 :  
 gctccactccatgaggatttctacaccgctgtgtcccgcccAgccgcggagagccccacttcatcgcagtgg  
 ctacgtggacgacacgcagttcgtgcggttcgacagcgacgcgcgactccaagagggagccgcggcgccgtgg  
 gtggagcaggagggccggatattggaccggagacacagaagtacaagcgccaggcacagactgaccgagtga  
 10     acctgcgaaactgcgcggctactacaaccagagcgcaggccggctcacaccctccagAggatgtatggctgcga  
 cctggggcccacgggcgcctccgcgggtatgaccagtCgcctacgacggcaaggattacatcgccctgaac  
 gaggacctgcgcctccggaccgcgcggacacGcggctcagatcacccagcgcaagtggaggccggccgtgagg  
 cgagcagTggagagcctacctggaggcgAgtgcgtggagtgctcccgagataacctggagaacgggaaggagac  
 gctgcagcgccgg (SEQ ID NO:131665) ;  
 15     Cw\*0203 :  
 gctccactccatgaggatttctacaccgctgtgtcccgcccagccgcggagagccccacttcatcgcagtgg  
 ctacgtggacgacacgcagttcgtgcggttcgacagcgacgcgcgactccaagagggagccgcggcgccgtgg  
 gtggagcaggagggccggatattggaccggagacacagaagtacaagcgccaggcacagactgaccgagtga  
 acctgcgaaactgcgcggctactacaaccagagcgcaggccggctcacaccctccagaggatgtacggctgcga  
 20     cctggggcccacgggcgcctccgcgggtatgaccagtccgcctacgacggcaaggattacatcgccctgaac  
 gaggacctgcgcctccggaccgcgcggacacagcgctcagatcacccagcgcaagtggaggccggccgtgTgg  
 cgagcagctgagagcctacctggaggcgAgtgcgtggagtgctcccgagataacctggagaacgggaaggagac  
 gctgcagcgccgg (SEQ ID NO:141666) ;  
 Cw\*0204 :  
 25     gctccactccatgaggatttctacaccgctgtgtcccgcccagccgcggagagccccacttcatcgcagtgg  
 ctacgtggacgacacgcagttcgtgcggttcgacagcgacgcgcgactccaagagggagccgcggcgccgtgg  
 gtggagcaggagggccggatattggaccggagacacagaagtacaagcgccaggcacagactgaccgagtga

acctgcggaaactgcgcccgtactacaaccagagcgaggccgggtctcacaccctccagaggatgtacggctgcga  
 cctggggccccgacgggcgcctccgcgggtatgaccagtccgcctacgacggcaaggattacatcgccctgaac  
 gaggacctgcgctcctggaccgcgcggacacagcggctcagatcaccagcgcaagtggaggccggccgtgagg  
 cgaggcagtggagagcctacctggagggcgagtgcgtggagtggctcccgagatacctggagaacgggaaggagac  
 5 gctgcagcgcgcgg (SEQ ID NO:151667) ;

Cw\*0205 :

gctcccactccatgaggtatttctacaccgcgtgtgtcccgcccAgccgcggagagccccacttcatcgcagtgg  
 ctacgtggacgcacacgcagttcgtgcggttcgacagcgacgcgcgcgactccaagagggagccgcggccgcgtgg  
 gtggagcaggagggccggagtattgggaccggagacacagaagtacaagcgccaggcacagactgaccgagtga  
 10 acctgcggaaactgcgcccgtactacaaccagagcgaggccgggtctcacaccctccagtgatgtatggctgcga  
 cctggggccccgacgggcgcctccgcgggtatgaccagtCgcctacgacggcaaggattacatcgccctgaac  
 gaggacctgcgctcctggaccgcgcggacacGcggctcagatcaccagcgcaagtggaggccggccgtgagg  
 cgaggcagTggagagcctacctggagggcgAgtgcgtggagtggctcccgagatacctggagaacgggaaggagac  
 gctgcagcgcgcgg (SEQ ID NO:161668) ;

15 Cw\*0206 :

gctcccactccatgaggtatttctacaccgcgtgtgtcccgcccagccgcggagagccccacttcatcgcagtgg  
 ctacgtggacgcacacgcagttcgtgcggttcgacagcgacgcgcgcgactccaagagggagccgcggccgcgtgg  
 gtggagcaggagggccggagtattgggaccggagacacagaagtacaagcgccaggcacagactgaccgagtga  
 acctgcggaaactgcgcccgtactacaaccagagcgaggccgggtctcacaccctccagaggatgtacggctgcga  
 20 cctggggccccgacgggcgcctccgcggcatgaccagttAgcctacgacggcaaggattacatcgccctgaac  
 gaggacctgcgctcctggaccgcgcggacacggcgctcagatcaccagcgcaagtggaggccggccgtgagg  
 cgaggcagtggagagcctacctggagggcgAgtgcgtggagtggctcccgagatacctggagaacgggaaggagac  
 gctgcagcgcgcgg (SEQ ID NO:171669) ;

Cw\*030201 :

25 atgcgggtcatggcgccccgaaccctcatcctgcgtctcggagccctggccctgaccgagacactggccggct  
 cccactccatgaggtatttctacaccgcgtgtgtcccgccgcggggagccccacttcatcgcagtggctca  
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 25 Cw\*0403 :  
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Cw\*0404 :

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Cw\*0405 :

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5 Cw\*0406 :

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Cw\*0407 :

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 20 gaggatctgcgtcctggaccgcgcggacacggcggtcagatcacccagcgcaagtggaggcgccgtgagg  
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Cw\*0408 :

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5 Cw\*0410 :

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Cw\*0501 :

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 Cw\*0502 :  
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 Cw\*0503 :  
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Cw\*0504 :

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10 Cw\*0505 :

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Cw\*0506 :

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Cw\*0602 :

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Cw\*0603 :

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Cw\*0604 :

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Cw\*0605 :

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Cw\*0606 :

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Cw\*0607 :

5 gctcccaactccatgaggtaattcgacaccgcgtgtcccgccggccggagagccccgcttcatctcagtgg  
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Cw\*0608 :

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Cw\*0609 :

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Cw\*070101 :

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Cw\*1511 :

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Cw\*1601 :

15       atgcgggtcatggcgcggccgaaccctcatcctgctgtctcgaggccctggccctgaccgagacctggcctgtct  
 cccactccatgaggtatttctacaccgcgtgtcccgccggccgcggagagcccccgttcatcgcagtggccta  
 cgtggacgacacgcagttcgtgcggttcgacagcgacgcgcgcgactccaagagggagccgcggccgtgggt  
 gagcaggagggccggagtattgggaccggagacacagaagtacaagcgccaggcacagactgaccgagtgagcc  
 tgcggaacctgcgcggctactacaaccagagcgaggccgggtctcacaccctccagtgatgtatggctgcgac  
 gggcccgacgggcgcctccgcgggtatgaccagtccgcctacgacggcaaggattacatgcgcctgaacgag  
 gacctgcgcctggaccgcgcggacacggcggctcagatcacccagcgcaagtggaggccgcgtgcccgg  
 20      agcagcAgagagcctacctggagggcacgtgcgtggagtggctcccgagataacctggagaacgggaaggagac  
 gcagcgccggaacacccaaagacacacacgtgacccaccatctgtctgaccatgaggccaccctgaggtgctgg  
 gccctggcttctaccctgcggagatcacactgacactggcagcggatggcgaggacaaactcaggacaccgag  
 ttgtggagaccaggccagcaggagatggaacctccagaagtggcagctgtgggtgccttctggagaagagca  
 gagatacacgtgccatgtcagcacgagggctgcggagccctcaccctgagatgggagccatctccagccc  
 25      accatccccatcgtggcatcgttgctggctggctgtcctggctgtcctagctgtccttaggagctgtggctg  
 ttgtatgttaggaggaagagctcaggtggaaaaggagggagctgcttcaggctgcgtccagcaacagtgc  
 gggctctgatgagtctctcatcgctttaa (SEQ ID NO:1181770) ;

Cw\*1602 :

```

atgcgggtcatggccccgaaccctatcctgctctcgagccctggccctgaccgagacctggccctgct
cccactccatgaggatttctacaccggcgtgtcccgccggccggagagcccccttcatgcagtggcta
cgtggacgacacgcagttcgtgcgggtcgacagcgcacgcggcggactccaagagggagccggccgtgggt
5 gaggcaggagggccggagtattggaccggagacacaaggtaaagcgcaggcacagactgaccgagtgaacc
tgcgaaActgcgcggctactacaaccagagcggccgggtctcacaccctccagtgatgtatggctgcac
gggccccacgggcgcctcccgccggatgaccagtcgcctacgcggcaaggattacatgcgcctgaacgag
gacctgcgcctgaccgcggacacggcggctcagatcacccagcgaagtggaggccggccgtgcggcgg
agcagcAgagagcctaccctggagggcacgtgcgtggagtggctccgcagatacctggagaacggaaaggagac
10 gcagcgcgcgaaacacccaaagacacacgtgaccaccatctgtctgaccatgaggccaccctgaggtgctgg
gccctggcttctaccctgcggagatcacactgacctggcagcggatggcgaggacaaactcaggacaccgagc
ttgtggagaccaggccagcaggagatggaacctccagaagtggcagctgtgggtgcctctggagaagagca
gagatacactgcgcattgtgcagcagcggcgtccggagccctcaccctgagatgggagccatctccagccc
accatccccatcggtggcatcggtgcgtggctgtccctggctgtcctagctgtcttaggagctgtggcgt
15 ttgtTatgtgttaggaggaagagactcaggtggaaaaggagggagctgcttcaggctgcgtccagcaacagtgc
ccatctgtatgagtcgtcatcgcttgtaa (SEQ ID NO:1191771) ;

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Cw\*160401 :

```

atgcgggtcatggccccgaaccctatcctgctctcgagccctggccctgaccgagacctggccctgct
cccactccatgaggatttctacaccggcgtgtcccgccggccggagagcccccttcatgcagtggcta
cgtggacgacacgcagttcgtgcgggtcgacagcgcacgcggcggactccaagagggagccggccgtgggt
gaggcaggagggccggagtattggaccggagacacaaggtaaagcgcaggcacagactgaccgagtgagcc
tgcggaacctgcgcggctactacaaccagagcggccgggtctcacaccctccagtgatgtatggctgcac
gggccccacgggcgcctcccgccggatgaccagtcgcctacgcggcaaggattacatgcgcctgaacgag
gacctgcgcctgaccgcggacacggcggctcagatcacccagcgaagtggaggccggccgtgcggcgg
25 agcagTggagagcctaccctggagggcacgtgcgtggagtggctccgcagatacctggagaacggaaaggagac
gcagcgcgcgaaacacccaaagacacacgtgaccaccatctgtctgaccatgaggccaccctgaggtgctgg
gccctggcttctaccctgcggagatcacactgaccctggcagcggatggcgaggacaaactcaggacaccgagc

```

ttgtggagaccaggccagcaggagatggaaccttccagaagtggcagctgtggggccttctggagaagagca  
 gagatacacgtgccatgtgcagcacgaggcgtccggagccctcaccctgagatgggagccatttcccagcccc  
 accatccccatcggtggcatcggtgcgtggctgtccctggctgtccctagctgtccttaggagctgtggctg  
 ttgtTatgtgttaggaggaagagctag (SEQ ID NO:1201772) ;

5 Cw\*1701 :

atgcgggtcatggcgccccaaagccctccctgctgtctcggtggccctgatcgagacactggccggct  
 cccactccatgaggattttctacaccgcgtgtccggccggccgcggagagcccccgttcatcgactggccta  
 cgtggacgacacgcagttcgtgcgggttcgacagcgcacgcgcgcgactccgagagggagccgcggccgtgggt  
 gaggcaggagggccggagtattgggaccggagacacagaagtacaaggccaggcacaggctgaccgagtgaacc  
 10 tgcggaaaactgcgcggctactacaaccagacgcggccgttctcacaccatccagaggatgtatggctgcgac  
 gggcccgacggcgccctcccgccggataaccagttcgctacgcggcaaggattacatgcgcctgaacgag  
 gacctgcgctcctggaccgcggacacgcggcgtcagatctccagcgcaagttggaggccggccgtgaggcgg  
 agcagctgagacgcctacctggaggcgcgactgcgtggagtggctccgcggataccctggagaacggaaaggagac  
 gcgcgcgcggaaacgcggaaagacacacgtgaccaccatccgtctgaccatgaggccaccctgaggtgctgg  
 15 gccctggcttctaccctgcggagatcacactgacactggcagcggatggggaggacaaactcaggacaccgagc  
 ttgtggagaccaggccagcaggagatggaaccttccagaagtggcagctgtggggccttctggacaagaaca  
 gagatacacgtgccatgtgcagcacgaggcgtccggagccctgaccctgagatggaagccgtttccagcccc  
 accatccccaaacttggcatcggttctggcccgactgtccctggctgtccctggctgtccctagctgtcc  
 taggagctgtggcgctgtgtataC (SEQ ID NO:1211773) ;

20 Cw\*1702 :

atgcgggtcatggcgccccaaaccctcatccgtctgtctcggtggccctgatcgagacactggccggct  
 cccactccatgaggattttctacaccgcgtgtccggccggccgcggagagcccccgttcatcgactggccta  
 cgtggacgacacgcagttcgtgcgggttcgacagcgcacgcgcgcgactccgagagggagccgcggccgtgggt  
 gaggcaggagggccggagtattgggaccggagacacagaagtacaaggccaggcacaggctgaccgagtgaacc  
 25 tgcggaaaactgcgcggctactacaaccagacgcggccgttctcacaccatccagaggatgtatggctgcgac  
 gggcccgacggcgccctcccgccggataaccagttcgctacgcggcaaggattacatgcgcctgaacgag  
 gacctgcgctcctggaccgcggacacgcggcgtcagatctccagcgcaagttggaggccggccgtgaggcgg

agcagctgagagcc tac tggaggcgagtgcgtggagtggctccgcgatacctggagaacggaaaggagacgct  
 gcagcgcgcggaacgc cca aag acac acat cgt gacc accat cccgt ct gaccat gaggcc acc ctc gaggt gct gg  
 gccctggcttctaccctcg gg agatcacactgac ctggc agc gggatgggaggacaaactcaggac acc gac  
 ttgtggagaccaggccagcaggagatggaaccc tccaga a gatggc agc t gttggc cttctggacaagaaca  
 5       gagatac acgtgccatgtgcagcac gagg gctgcagg accct Gcaccctgagatgga (SEQ ID  
NO:1221774) ;  
 Cw\*1703 :  
 atgcgggtcatggcgcccc aagccctccctgctgctctcggagccctggccctgatcgagac tggAccggct  
 cccactccatgagg tatttctacaccgcgtgtcccgccggccgcggagagcccccgttcatcg cagtggc ta  
 10      cgtggac gac acgc agttcgtgcgg ttcgac agc gac gccc gca gtc gagg gggagccgcggccgtgggt  
 gagcaggaggggccggagtattgggaccgggagacacaga a gatacaagcgc caggc acaggctgaccg a gatgaa  
 tgccgaaactgcgcggctactacaaccagagc gaggccgttctcacaccatccagaggatgtatggctgcac  
 gggcccgacggcgccctcccgccgg tataaccagttcgcctacgacggcaaggattacatccctgaa  
 gacctgcgc tctggaccgcggacacggccgtcagatctccagcgcaagttggaggccggccgtgaggccg  
 15      agcagctgagagcc tac tggaggcgagtgcgtggagtggctccgcgatacctggagaacggaaaggagacgct  
 gcagcgcgcggaacgc cca aag acac acat cgt gacc accat cccgt ct gaccat gaggcc acc ctc gaggt gct gg  
 gccctggcttctaccctcg gg agatcacactgac ctggc agc gggatgggaggacaaactcaggac acc gac  
 ttgtggagaccaggccagcaggagatggaaccc tccaga a gatggc agc t gttggc cttctggacaagaaca  
 20      gagatac acgtgccatgtgcagcac gagg gctgcagg accct gca cacc tggctgtcc tagt gtc  
 accatcccc aacttggcatcg tttctggcc cagctgtcc tggctgtc tggctgtcc tagt gtc  
 taggagctgtggcgtctgtgatac (SEQ ID NO:1231775) ;  
 Cw\*1801 :  
 atgcgggtcatggcgcccc aagccctccctgctgctctcggagccctggccctgaccgagac tggAccggct  
 cccactccatgagg tatttctacaccgcgtgtcccgccggccgcggagagcccccgttcatcg cagtggc ta  
 25      cgtggac gac acgc agttcgtgcgg ttcgac agc gac gccc gca gtc gagg gggagccgcggccgtgggt  
 gagcaggaggggccggagtattgggaccgggagacacaga a gatacaagcgc caggc acaggctgaccg a gatgaa  
 tgccgaaactgcgcggctactacaaccagagc gaggccgttctcacaccatccagaggatgttggctgcac

ggggccggacgggcgcctcccgccggtataaccagttgcctacgacggcaaggattacatgcctgaacgag  
 gatctgcgtcctggaccgcgcggacacggcgctcagatcacccagcgcaagtgggaggcggccgtgaggcgg  
 agcagcggagagccatggagggcacgtgcgtggagtggctccgcagatacctggagaacggaaaggagacgt  
 gcagcgcgcgaaacacccaaagacacacgtgacccaccatcccgtctgaccatgaggccaccctgaggtgctgg  
 5 gccctggcttctaccctgcggagatcacactgacactggcagtggatggggacccaaactcaggacaccgagc  
 ttgtggagaccaggccagcaggagatggaacccatccagaagtggcagctgtgggtgccttctggagaagagca  
 gagatacactgcgtcatgtcagcacgaggggctgcggagccccctcaccctgagatggAagccgtttccagcccc  
 accatccccatcgtggcatcgttgctggctgtccctggTtgtcctagctgtccttaggagctgtgggtggctg  
 ttgtatgttaggaggaagagctcaggtggaaaaggagggagctgctcaggctgcgtccagcaacagtgc  
 10 gggctctgatgagtctctcatcgctttaa (SEQ ID NO:1241776) ;  
 Cw\*1802 :  
 atgcgggtcatggcgcggcggcggcggcggcggcggcggcggcggcggcggcggcggcggcggcggcggcggc  
 cccactccatgaggatttcgacaccgcgtgtcccgccggccgcggagagcccccttcatctcagtggtggcta  
 cgtggacgacacgcagttcgtgcgttcgacagcgcacgcgcgcgcgcgcgcgcgcgcgcgcgcgcgcgc  
 15 gaggcaggagggccggagtattggaccggagacacagaagtacaaggccaggcacaggctgaccgagtgacc  
 tgccggaaactgcgcggctactacaaccagagcggcggcggcggcggcggcggcggcggcggcggcggcgg  
 gggccggacggccgcctcccgccggtataaccagttgcctacgacggcaaggattacatgcctgaacgag  
 gaTctgcgtcctggaccgcgcggacacccgcgcgcgcgcgcgcgcgcgcgcgcgcgcgcgcgcgcgc  
 agcagcggagagccatggagggcacgtgcgtggagtggctccgcagatacctggagaacggaaaggagacgt  
 20 gcagcgcgcgaaacacccaaagacacacgtgacccaccatcccgtctgaccatgaggccaccctgaggtgctgg  
 gccctggcttctaccctgcggagatcacactgacactggcagtggatggggacccaaactcaggacaccgagc  
 ttgtggagaccaggccagcaggagatggaacccatccagaagtggcagctgtgggtgccttctggagaagagca  
 gagatacactgcgtcatgtcagcacgaggggctgcggagccccctcaccctgagatggAagccgtttccagcccc  
 accatccccatcgtggcatcgttgctggctggctgtccctagctgtccttaggagctgtgggtggctg  
 25 ttgtatgttaggaggaagagctcaggtggaaaaggagggagctgctcaggctgcgtccagcaacagtgc  
 gggctctgatgagtctctcatcgctttaa (SEQ ID NO:1251777) ;

In the following, Probe Lists C1 and C2 are shown In Tables 9-1 to 9-4 and Tables 10-1 to 10-4 respectively.

Table 9-1

| <b>Probe No.</b> | <b>Base Sequence</b>                                    |
|------------------|---------------------------------------------------------|
| 0                | c acc ctc cag tgg atg tG ( SEQ ID No: <u>1261778</u> )  |
| 1                | c cgc ggg tat gac cag tA ( SEQ ID No: <u>1271779</u> )  |
| 2                | g acc gcc gcg gac acC ( SEQ ID No: <u>1281780</u> )     |
| 3                | ag aag tgg gca gct gtg A ( SEQ ID No: <u>1291781</u> )  |
| 4                | c ctc ctc cgc ggg tat A ( SEQ ID No: <u>1301782</u> )   |
| 5                | g cgc tcc tgg acc gcT ( SEQ ID No: <u>1311783</u> )     |
| 6                | g cac gag ggg ctg ccA ( SEQ ID No: <u>1321784</u> )     |
| 7                | ct gtc cta gga gct gtg A ( SEQ ID No: <u>1331785</u> )  |
| 8                | c acc ctc cag agg atg tc ( SEQ ID No: <u>1341786</u> )  |
| 9                | gg gag gcg gcc cgt gT ( SEQ ID No: <u>1351787</u> )     |
| 10               | ggg cgc ctc ctc cgc A ( SEQ ID No: <u>1361788</u> )     |
| 11               | c aag tgg gag gcg gcc T ( SEQ ID No: <u>1371789</u> )   |
| 12               | c cgt gag gcg gag cag T ( SEQ ID No: <u>1381790</u> )   |
| 13               | a gtg aac ctg cgg aaa ctA ( SEQ ID No: <u>1391791</u> ) |
| 14               | cc ctg ggc ttc tac cct A ( SEQ ID No: <u>1401792</u> )  |
| 15               | g acc gcc gcg gac acA ( SEQ ID No: <u>1411793</u> )     |
| 16               | gct gtg tcc cgg ccc A ( SEQ ID No: <u>1421794</u> )     |
| 17               | g acc gcc gcg gac acG ( SEQ ID No: <u>1431795</u> )     |
| 18               | cc ctg aga tgg gag ccA ( SEQ ID No: <u>1441796</u> )    |
| 19               | gg tct cac acc ctc cag A ( SEQ ID No: <u>1451797</u> )  |
| 20               | cgc ggg tat gac cag tc ( SEQ ID No: <u>1461798</u> )    |
| 21               | gcc tac ctg gag ggc gA ( SEQ ID No: <u>1471799</u> )    |
| 22               | c tcc cac tcc atg agg tG ( SEQ ID No: <u>1481800</u> )  |
| 23               | cgc ggg cat gac cag ttA ( SEQ ID No: <u>1491801</u> )   |
| 24               | g gac caa act cag gac acT ( SEQ ID No: <u>1501802</u> ) |
| 25               | c aac cag agc gag gcc A ( SEQ ID No: <u>1511803</u> )   |
| 26               | ag gcc agg tct cac atc A ( SEQ ID No: <u>1521804</u> )  |
| 27               | g aag tgg gca gct gtg G ( SEQ ID No: <u>1531805</u> )   |
| 28               | gcg gac acg gcg gcC ( SEQ ID No: <u>1541806</u> )       |
| 29               | at ggc tgc gac gtg ggA ( SEQ ID No: <u>1551807</u> )    |
| 30               | g gcc ggg tct cac atc A ( SEQ ID No: <u>1561808</u> )   |

Table 9-2

| <b>Probe No.</b> | <b>Base Sequence</b>                                    |
|------------------|---------------------------------------------------------|
| 31               | c atc atc cag agg atg taC ( SEQ ID No: <u>1571809</u> ) |
| 32               | c cgc aga tac ctg aag aaT ( SEQ ID No: <u>1581810</u> ) |
| 33               | ct cac acc ctc cag agC ( SEQ ID No: <u>1591811</u> )    |
| 34               | ctc ctc cgc ggg tat gT ( SEQ ID No: <u>1601812</u> )    |
| 35               | ca cag act gac cga gtg aA ( SEQ ID No: <u>1611813</u> ) |
| 36               | cga gtg aac ctg cgg aaA ( SEQ ID No: <u>1621814</u> )   |
| 37               | gg atg tat ggc tgc gac G ( SEQ ID No: <u>1631815</u> )  |
| 38               | gcc tac ctg gag ggc cT ( SEQ ID No: <u>1641816</u> )    |
| 39               | gac cgg gag aca cag aaC ( SEQ ID No: <u>1651817</u> )   |
| 40               | g gag ccc cac ttc atc G ( SEQ ID No: <u>1661818</u> )   |
| 41               | cga gtg agc ctg cgg aaA ( SEQ ID No: <u>1671819</u> )   |
| 42               | cgc ggg tat gac tag ttA ( SEQ ID No: <u>1681820</u> )   |
| 43               | g gag gcg gcc cgt gC ( SEQ ID No: <u>1691821</u> )      |
| 44               | c tac aac cag agc gag gA ( SEQ ID No: <u>1701822</u> )  |
| 45               | cgt gag gcg gag cag cT ( SEQ ID No: <u>1711823</u> )    |
| 46               | cta gct gtc cta gga gct A ( SEQ ID No: <u>1721824</u> ) |
| 47               | ggc tac gtg gac gac acA ( SEQ ID No: <u>1731825</u> )   |
| 48               | gc cgc gga gag ccc cA ( SEQ ID No: <u>1741826</u> )     |
| 49               | g aga tac acg tgc cat gtT ( SEQ ID No: <u>1751827</u> ) |
| 50               | ga ggg gag ccg cgg gA ( SEQ ID No: <u>1761828</u> )     |
| 51               | c atc gca gtg ggc tac C ( SEQ ID No: <u>1771829</u> )   |
| 52               | c tgc gac ctg ggg ccG ( SEQ ID No: <u>1781830</u> )     |
| 53               | tc tcc aca tcc gtg tcc T ( SEQ ID No: <u>1791831</u> )  |
| 54               | c aag cgc cag gca cag G ( SEQ ID No: <u>1801832</u> )   |
| 55               | gg acc gcc gcg gac aA ( SEQ ID No: <u>1811833</u> )     |
| 56               | ctc act ctg aga tgg gG ( SEQ ID No: <u>1821834</u> )    |
| 57               | tg tgc gtg gag tgg ctG ( SEQ ID No: <u>1831835</u> )    |
| 58               | cc atc tct gac cat gag gT ( SEQ ID No: <u>1841836</u> ) |
| 59               | ac ctg gag aac ggg aag A ( SEQ ID No: <u>1851837</u> )  |
| 60               | c cgc ggg tat aac cag tT ( SEQ ID No: <u>1861838</u> )  |

Table 9-3

| <b>Probe No.</b> | <b>Base Sequence</b>                                      |
|------------------|-----------------------------------------------------------|
| 61               | g gag ccg cgg gcg cG ( SEQ ID No: <u>1871839</u> )        |
| 62               | t ccg aga ggg gag ccC ( SEQ ID No: <u>1881840</u> )       |
| 63               | g agg tat ttc tac acc gcT ( SEQ ID No: <u>1891841</u> )   |
| 64               | c gac gcc gcg agt ccA ( SEQ ID No: <u>1901842</u> )       |
| 65               | gt cca aga ggg gag ccC ( SEQ ID No: <u>1911843</u> )      |
| 66               | gcg ccg tgg gtg gag A ( SEQ ID No: <u>1921844</u> )       |
| 67               | c acc ctc cag agg atg tA ( SEQ ID No: <u>1931845</u> )    |
| 68               | g atc acc cag cgc aag tT ( SEQ ID No: <u>1941846</u> )    |
| 69               | g acg ctg cag cgc gcA ( SEQ ID No: <u>1951847</u> )       |
| 70               | c tct gat gag tct ctc atc A ( SEQ ID No: <u>1961848</u> ) |
| 71               | gag cca tct tcc cag ccT ( SEQ ID No: <u>1971849</u> )     |
| 72               | ga gcc tac ctg gag ggA ( SEQ ID No: <u>1981850</u> )      |
| 73               | t gcg gcg gag cag gaC ( SEQ ID No: <u>1991851</u> )       |
| 74               | aac ctg cgc ggc tac taT ( SEQ ID No: <u>2001852</u> )     |
| 75               | g tct cac acc ctc cag aaT ( SEQ ID No: <u>2011853</u> )   |
| 76               | a gct gtg gtc acc gct aA ( SEQ ID No: <u>2021854</u> )    |
| 77               | c acc ctc cag agg atg tT ( SEQ ID No: <u>2031855</u> )    |
| 78               | ag gac ggg tct cac atc A ( SEQ ID No: <u>2041856</u> )    |
| 79               | ac atc atc cag agg atg tC ( SEQ ID No: <u>2051857</u> )   |
| 80               | tgc tct cag gct gcg tG ( SEQ ID No: <u>2061858</u> )      |
| 81               | c cgc ggg tat gac cag tT ( SEQ ID No: <u>2071859</u> )    |
| 82               | g gag acg ctg cag cgc A ( SEQ ID No: <u>2081860</u> )     |
| 83               | g ccc ctc acc ctg agC ( SEQ ID No: <u>2091861</u> )       |
| 84               | ggg agc tgc tct cag gT ( SEQ ID No: <u>2101862</u> )      |
| 85               | cgt acg gcg gag cag cT ( SEQ ID No: <u>2111863</u> )      |
| 86               | acc ctc cag agg atg taC ( SEQ ID No: <u>2121864</u> )     |
| 87               | tgg gag gcg gcc cgt A ( SEQ ID No: <u>2131865</u> )       |
| 88               | cgc aga tac ctg gag aac A ( SEQ ID No: <u>2141866</u> )   |
| 89               | gcc tac ctg gag ggc G ( SEQ ID No: <u>2151867</u> )       |
| 90               | ga tac ctg gag aac ggg G ( SEQ ID No: <u>2161868</u> )    |

Table 9-4

| <b>Probe No.</b> | <b>Base Sequence</b>                                     |
|------------------|----------------------------------------------------------|
| 91               | ac ctg cgc tcc tgg acT ( SEQ ID No: <u>2171869</u> )     |
| 92               | g cgc tcc tgg acc gcG ( SEQ ID No: <u>2181870</u> )      |
| 93               | a gag ccc cgc ttc atc G ( SEQ ID No: <u>2191871</u> )    |
| 94               | c acc ctc cag tgg atg tA ( SEQ ID No: <u>2201872</u> )   |
| 95               | cag tcc gcc tac gac gT ( SEQ ID No: <u>2211873</u> )     |
| 96               | a cag gct gac cga gtg G ( SEQ ID No: <u>2221874</u> )    |
| 97               | cac tcc atg agg tat ttc tC ( SEQ ID No: <u>2231875</u> ) |
| 98               | c acc ctc cag tgg atg tT ( SEQ ID No: <u>2241876</u> )   |
| 99               | a cag gct gac cga gtg aA ( SEQ ID No: <u>2251877</u> )   |
| 100              | atc gcc ctg aac gag gaT ( SEQ ID No: <u>2261878</u> )    |
| 101              | gc ctc ctc cgc ggg C ( SEQ ID No: <u>2271879</u> )       |
| 102              | tc atg gcg ccc cga acT ( SEQ ID No: <u>2281880</u> )     |
| 103              | cgc ggg cat gac cag tT ( SEQ ID No: <u>2291881</u> )     |
| 104              | cgc ggg cat gac cag tC ( SEQ ID No: <u>2301882</u> )     |
| 105              | gt gcg gcg gag cag cA ( SEQ ID No: <u>2311883</u> )      |
| 106              | gct gtg gtg gct gtt gtT ( SEQ ID No: <u>2321884</u> )    |
| 107              | cgt gcg gcg gag cag T ( SEQ ID No: <u>2331885</u> )      |
| 108              | tg gtc gct gct gtg ata C ( SEQ ID No: <u>2341886</u> )   |
| 109              | gg ctg cag gag ccc tG ( SEQ ID No: <u>2351887</u> )      |
| 110              | cc ctg atc gag acc tca A ( SEQ ID No: <u>2361888</u> )   |
| 111              | cc ctc acc ctg aga tgg A ( SEQ ID No: <u>2371889</u> )   |
| 112              | Ggc ctg gct gtc ctg gT ( SEQ ID No: <u>2381890</u> )     |

Table 10-1

| <b>Probe No.</b> | <b>Base Sequence</b>                                    |
|------------------|---------------------------------------------------------|
| 0                | g tgg atg tGt ggc tgc g ( SEQ ID No: <u>2391891</u> )   |
| 1                | at gac cag tAc gcc tac g ( SEQ ID No: <u>2401892</u> )  |
| 2                | gcg gac acc gcg gct c ( SEQ ID No: <u>2411893</u> )     |
| 3                | gca gct gtg Atg gtg cct ( SEQ ID No: <u>2421894</u> )   |
| 4                | cgc ggg tat Aac cag ttc ( SEQ ID No: <u>2431895</u> )   |
| 5                | tgg acc gcT gcg gac ac ( SEQ ID No: <u>2441896</u> )    |
| 6                | ggg ctg cCA gag ccc c ( SEQ ID No: <u>2451897</u> )     |
| 7                | gga gct gtg Atg gct gtt ( SEQ ID No: <u>2461898</u> )   |
| 8                | g agg atg tCt ggc tgc g ( SEQ ID No: <u>2471899</u> )   |
| 9                | g gcc cgt gTg gcg gag ( SEQ ID No: <u>2481900</u> )     |
| 10               | ctc ctc cgc Agg tat gac ( SEQ ID No: <u>2491901</u> )   |
| 11               | g gcg gcc Tgt gag gcg ( SEQ ID No: <u>2501902</u> )     |
| 12               | cg gag cag Tgg aga gcc ( SEQ ID No: <u>2511903</u> )    |
| 13               | g cgG aaa ctA cgc ggc ta ( SEQ ID No: <u>2521904</u> )  |
| 14               | ttc tat cct Acg gag atc a ( SEQ ID No: <u>2531905</u> ) |
| 15               | gcg gac acA gcg gct c ( SEQ ID No: <u>2541906</u> )     |
| 16               | c cgG ccc Agc cgc gg ( SEQ ID No: <u>2551907</u> )      |
| 17               | gcg gac acG gcg gct c ( SEQ ID No: <u>2561908</u> )     |
| 18               | a tgg gag ccA tct tcc ca ( SEQ ID No: <u>2571909</u> )  |
| 19               | acc ctc cag Agg atg tat g ( SEQ ID No: <u>2581910</u> ) |
| 20               | t gac cag tCc gcc tat g ( SEQ ID No: <u>2591911</u> )   |
| 21               | g gag ggc gAg tgc gtg ( SEQ ID No: <u>2601912</u> )     |
| 22               | cc atg agg tGt ttc tac ac ( SEQ ID No: <u>2611913</u> ) |
| 23               | t gac cag ttA gcc tac gac ( SEQ ID No: <u>2621914</u> ) |
| 24               | t tag gac acT gag ctt gtg ( SEQ ID No: <u>2631915</u> ) |
| 25               | gc gag gcc Agg tct cac ( SEQ ID No: <u>2641916</u> )    |
| 26               | tct cac atc Atc cag agg a ( SEQ ID No: <u>2651917</u> ) |
| 27               | ca gct gtg Gtg gtg cct ( SEQ ID No: <u>2661918</u> )    |
| 28               | acg gcg gcC cag atc ac ( SEQ ID No: <u>2671919</u> )    |
| 29               | gac gtg gGA ccc gac g ( SEQ ID No: <u>2681920</u> )     |
| 30               | g agg atg taC ggc tgc ga ( SEQ ID No: <u>2691921</u> )  |

Table 10-2

| <b>Probe No.</b> | <b>Base Sequence</b>                                    |
|------------------|---------------------------------------------------------|
| 31               | c ctg aag aaT ggg aag gag ( SEQ ID No: <u>2701922</u> ) |
| 32               | c ctc cag agC atg tac gg ( SEQ ID No: <u>2711923</u> )  |
| 33               | gc ggg tat gTc cag tac g ( SEQ ID No: <u>2721924</u> )  |
| 34               | c cga gtg aAc ctg cgg a ( SEQ ID No: <u>2731925</u> )   |
| 35               | ctg cgg aaA ctg cgc gg ( SEQ ID No: <u>2741926</u> )    |
| 36               | c tgc gac Gtg ggg ccc ( SEQ ID No: <u>2751927</u> )     |
| 37               | g gag ggc cTg tgc gtg ( SEQ ID No: <u>2761928</u> )     |
| 38               | g aca cag aaC tac aag cgc ( SEQ ID No: <u>2771929</u> ) |
| 39               | cac ttc atc Gca gtg ggc ( SEQ ID No: <u>2781930</u> )   |
| 40               | gcc cgt gCg gcg gag ( SEQ ID No: <u>2791931</u> )       |
| 41               | g agc gag gAc ggg tct c ( SEQ ID No: <u>2801932</u> )   |
| 42               | g gag cag cTg aga gcc t ( SEQ ID No: <u>2811933</u> )   |
| 43               | cta gga gct Atg gtg gct ( SEQ ID No: <u>2821934</u> )   |
| 44               | g gac gac acA cag ttc gt ( SEQ ID No: <u>2831935</u> )  |
| 45               | ga gag ccc cAc ttc atc g ( SEQ ID No: <u>2841936</u> )  |
| 46               | g tgc cat gtT cag cac ga ( SEQ ID No: <u>2851937</u> )  |
| 47               | ccg cgg gAg ccg tgg ( SEQ ID No: <u>2861938</u> )       |
| 48               | tg ggc tac CtG gac gac ( SEQ ID No: <u>2871939</u> )    |
| 49               | ctg ggg ccG gac ggg ( SEQ ID No: <u>2881940</u> )       |
| 50               | c gtg tcc Tgg ccc ggc ( SEQ ID No: <u>2891941</u> )     |
| 51               | ag gca cag Gct gac cga ( SEQ ID No: <u>2901942</u> )    |
| 52               | c gcg gac aAg gcg gct ( SEQ ID No: <u>2911943</u> )     |
| 53               | tg aga tgg gGg cca tct t ( SEQ ID No: <u>2921944</u> )  |
| 54               | g gag tgg ctG cgc aga ta ( SEQ ID No: <u>2931945</u> )  |
| 55               | ac cat gag gTc acc ctg a ( SEQ ID No: <u>2941946</u> )  |
| 56               | aac ggg aag Aag acg ctg ( SEQ ID No: <u>2951947</u> )   |
| 57               | at aac cag tTc gcc tac ga ( SEQ ID No: <u>2961948</u> ) |
| 58               | cgG gcg cGg tgg gtg ( SEQ ID No: <u>2971949</u> )       |
| 59               | ggg gag ccc cgg gcg ( SEQ ID No: <u>2981950</u> )       |
| 60               | tac acc gcT gtg tcc cg ( SEQ ID No: <u>2991951</u> )    |

Table 10-3

| <b>Probe No.</b> | <b>Base Sequence</b>                                     |
|------------------|----------------------------------------------------------|
| 61               | gcg agt ccA aga ggg ga ( SEQ ID No: 300 <u>1952</u> )    |
| 62               | gg gtg gag Aag gag ggg ( SEQ ID No: 301 <u>1953</u> )    |
| 63               | ag agg atg tAt ggc tgc g ( SEQ ID No: 302 <u>1954</u> )  |
| 64               | g cgc aag tTg gag gcg g ( SEQ ID No: 303 <u>1955</u> )   |
| 65               | cag cgc gca gaa ccc c ( SEQ ID No: 304 <u>1956</u> )     |
| 66               | g gct gcg tGc agc aac a ( SEQ ID No: 305 <u>1957</u> )   |
| 67               | tcc cag ccT acc atc cc ( SEQ ID No: 306 <u>1958</u> )    |
| 68               | ctg gag ggA ctg tgc gt ( SEQ ID No: 307 <u>1959</u> )    |
| 69               | g gag cag gaC aga gcc ta ( SEQ ID No: 308 <u>1960</u> )  |
| 70               | c ggc tac taT aac tag agc ( SEQ ID No: 309 <u>1961</u> ) |
| 71               | c ctc cag aaT atg tat ggc ( SEQ ID No: 310 <u>1962</u> ) |
| 72               | tc acc gct aAg atg tgt ag ( SEQ ID No: 311 <u>1963</u> ) |
| 73               | ag agg atg tTt ggc tgc g ( SEQ ID No: 312 <u>1964</u> )  |
| 74               | at gac cag tTc gcc tac g ( SEQ ID No: 313 <u>1965</u> )  |
| 75               | ggg ctg caA gag ccc c ( SEQ ID No: 314 <u>1966</u> )     |
| 76               | gc tct cag gTt gcg tgc a ( SEQ ID No: 315 <u>1967</u> )  |
| 77               | g gcc cgt Acg gcg gag ( SEQ ID No: 316 <u>1968</u> )     |
| 78               | ctg gag aac Agg aag aag a ( SEQ ID No: 317 <u>1969</u> ) |
| 79               | g gag ggc Gcg tgc gtg ( SEQ ID No: 318 <u>1970</u> )     |
| 80               | c ctc cag agC atg tat gg ( SEQ ID No: 319 <u>1971</u> )  |
| 81               | gag aac ggg Gag aag acg ( SEQ ID No: 320 <u>1972</u> )   |
| 82               | tcc tgg act gcc gcg g ( SEQ ID No: 321 <u>1973</u> )     |
| 83               | tgg acc gcG gcg gac a ( SEQ ID No: 322 <u>1974</u> )     |
| 84               | gc ttc atc Gca gtg ggc ( SEQ ID No: 323 <u>1975</u> )    |
| 85               | ag tgg atg tAt ggc tgc g ( SEQ ID No: 324 <u>1976</u> )  |
| 86               | cc tac gac gTc aag gat ta ( SEQ ID No: 325 <u>1977</u> ) |
| 87               | c cga gtg Ggc ctg cgg ( SEQ ID No: 326 <u>1978</u> )     |
| 88               | gg tat ttc tCc aca tcc gt ( SEQ ID No: 327 <u>1979</u> ) |
| 89               | ag tgg atg tTt ggc tgc g ( SEQ ID No: 328 <u>1980</u> )  |
| 90               | g aac gag gaT ctg cgc tc ( SEQ ID No: 329 <u>1981</u> )  |

Table 10-4

| Probe No. | Base Sequence                                           |
|-----------|---------------------------------------------------------|
| 91        | c cgc ggg Cat gac cag ( SEQ ID No: <u>3301982</u> )     |
| 92        | ccc cga act ctc ctc ct ( SEQ ID No: <u>3311983</u> )    |
| 93        | c cgc ggg Cat gac cag ( SEQ ID No: <u>3321984</u> )     |
| 94        | g gag cag cAg aga gcc t ( SEQ ID No: <u>3331985</u> )   |
| 95        | g gct gtt gtT atg tgt agg ( SEQ ID No: <u>3341986</u> ) |
| 96        | t gtg gtc gcT gct gtg at ( SEQ ID No: <u>3351987</u> )  |
| 97        | g gag ccc tGc acc ctg ( SEQ ID No: <u>3361988</u> )     |
| 98        | g acc tgg Acc ggc tcc ( SEQ ID No: <u>3371989</u> )     |
| 99        | ctg aga tgg Aag ccg tct ( SEQ ID No: <u>3381990</u> )   |
| 100       | ct gtc ctg gTt gtc cta g ( SEQ ID No: <u>3391991</u> )  |

**Table 11-1**

| Allele Number | Probe Number for Detection |    |    |    |    |
|---------------|----------------------------|----|----|----|----|
|               | 0                          | 1  | 2  | 3  |    |
| Cw*0102       | 0                          | 1  | 2  | 3  |    |
| Cw*0103       | 4                          |    |    |    |    |
| Cw*0104       | 5                          | 6  | 7  |    |    |
| Cw*0105       | 8                          |    |    |    |    |
| Cw*0106       | 9                          |    |    |    |    |
| Cw*0107       | 10                         |    |    |    |    |
| Cw*0108       | 11                         |    |    |    |    |
| Cw*0109       | 12                         |    |    |    |    |
| Cw*020201     | 13                         |    |    |    |    |
| Cw*020202     | 14                         |    |    |    |    |
| Cw*020203     | 15                         | 12 |    |    |    |
| Cw*020204     | 16                         | 17 | 18 |    |    |
| Cw*020205     | 16                         | 19 | 20 | 17 | 12 |
| Cw*0203       | 9                          | 21 |    |    | 21 |
| Cw*0204       | 22                         |    |    |    |    |
| Cw*0205       | 16                         | 20 | 17 | 12 | 21 |
| Cw*0206       | 23                         | 21 |    |    |    |
| Cw*030201     | 24                         | 18 |    |    |    |
| Cw*030202     | 20                         | 24 |    |    |    |
| Cw*030301     | 25                         | 26 | 27 |    |    |
| Cw*030302     | 28                         |    |    |    |    |
| Cw*030303     | 29                         |    |    |    |    |
| Cw*030401     | 30                         | 24 |    |    |    |
| Cw*030402     | 30                         | 31 | 32 |    |    |
| Cw*0305       | 33                         | 32 |    |    |    |
| Cw*0306       | 34                         |    |    |    |    |
| Cw*0307       | 35                         | 36 | 30 | 37 | 38 |
| Cw*0308       | 39                         | 30 | 24 |    |    |
| Cw*0309       | 40                         | 30 | 38 | 32 |    |
| Cw*0310       | 41                         | 30 | 37 | 38 | 32 |
| Cw*0311       | 25                         | 26 |    |    |    |

**Table 11-2**

| Allele Number | Probe Number for Detection |    |    |    |
|---------------|----------------------------|----|----|----|
| Cw*0312       | 25                         | 42 |    |    |
| Cw*0313       | 25                         | 27 |    |    |
| Cw*0314       | 43                         | 32 |    |    |
| Cw*0315       | 44                         | 20 | 38 | 32 |
| Cw*0316       | 37                         | 20 | 17 | 45 |
| Cw*040101     | 46                         |    |    |    |
| Cw*040102     | 47                         |    |    |    |
| Cw*0403       | 48                         | 49 |    |    |
| Cw*0404       | 50                         | 45 |    |    |
| Cw*0405       | 51                         |    |    |    |
| Cw*0406       | 48                         | 52 | 45 |    |
| Cw*0407       | 53                         | 54 |    |    |
| Cw*0408       | 50                         | 38 |    |    |
| Cw*0410       | 50                         |    |    |    |
| Cw*0501       | 36                         | 55 | 56 |    |
| Cw*0502       | 57                         |    |    |    |
| Cw*0503       | 58                         |    |    |    |
| Cw*0504       | 20                         | 55 | 59 |    |
| Cw*0505       | 37                         | 60 | 55 | 59 |
| Cw*0506       | 61                         |    |    |    |
| Cw*0602       | 62                         | 12 | 7  |    |
| Cw*0603       | 63                         | 62 | 20 | 12 |
| Cw*0604       | 62                         | 45 |    |    |
| Cw*0605       | 64                         | 65 | 20 | 17 |
| Cw*0606       | 62                         | 7  |    |    |
| Cw*0607       | 66                         |    |    |    |
| Cw*0608       | 44                         | 20 | 17 | 12 |
| Cw*0609       | 62                         | 60 | 12 |    |
| Cw*070101     | 67                         | 68 | 69 | 70 |
| Cw*070102     | 71                         |    |    |    |

**Table 11-3**

| Allele Number | Probe Number for Detection |    |    |    |       |
|---------------|----------------------------|----|----|----|-------|
| Cw*070201     | 8                          | 68 | 70 |    |       |
| Cw*0703       | 72                         |    |    |    |       |
| Cw*070401     | 73                         | 70 |    |    |       |
| Cw*070402     | 74                         |    |    |    |       |
| Cw*0705       | 75                         |    |    |    |       |
| Cw*0706       | 76                         |    |    |    |       |
| Cw*0707       | 36                         | 67 | 20 | 68 | 69    |
| Cw*0708       | 77                         | 20 | 68 | 69 |       |
| Cw*0709       | 36                         | 44 | 67 | 20 | 68 69 |
| Cw*0710       | 78                         | 79 | 20 | 68 | 69    |
| Cw*0711       | 73                         | 80 |    |    |       |
| Cw*0712       | 73                         |    |    |    |       |
| Cw*0713       | 8                          | 81 | 68 | 69 |       |
| Cw*0714       | 82                         |    |    |    |       |
| Cw*0715       | 8                          | 21 | 69 |    |       |
| Cw*0716       | 39                         | 67 | 20 | 68 | 69    |
| Cw*0717       | 8                          | 83 |    |    |       |
| Cw*0718       | 84                         |    |    |    |       |
| Cw*080101     | 85                         | 56 |    |    |       |
| Cw*080102     | 86                         | 60 | 87 |    |       |
| Cw*0802       | 55                         | 56 |    |    |       |
| Cw*0803       | 88                         | 7  |    |    |       |
| Cw*0804       | 55                         | 45 | 59 |    |       |
| Cw*0805       | 54                         | 60 | 55 | 59 |       |
| Cw*0806       | 89                         | 88 |    |    |       |
| Cw*0807       | 55                         | 68 | 59 |    |       |
| Cw*0808       | 33                         | 59 |    |    |       |
| Cw*0809       | 90                         |    |    |    |       |
| Cw*120201     | 86                         | 5  | 7  |    |       |
| Cw*120202     | 86                         | 5  | 6  | 7  |       |
| Cw*120203     | 67                         | 5  |    |    |       |
| Cw*120301     | 54                         | 91 | 7  |    |       |

**Table 11-4**

| Allele Number | Probe Number for Detection |     |     |     |     |    |
|---------------|----------------------------|-----|-----|-----|-----|----|
| Cw*120302     | 92                         | 12  |     |     |     |    |
| Cw*120401     | 93                         | 54  | 36  | 94  | 20  | 17 |
| Cw*120402     | 54                         | 36  | 91  | 7   |     |    |
| Cw*1205       | 36                         | 91  | 7   |     |     |    |
| Cw*1206       | 95                         |     |     |     |     |    |
| Cw*1207       | 96                         |     |     |     |     |    |
| Cw*1208       | 39                         | 86  | 5   | 6   | 7   |    |
| Cw*140201     | 97                         | 20  | 27  |     |     |    |
| Cw*140202     | 97                         | 98  | 20  |     |     |    |
| Cw*1403       | 97                         | 64  | 20  | 27  |     |    |
| Cw*1404       | 97                         | 99  | 98  | 20  | 100 |    |
| Cw*1405       | 97                         | 94  | 20  | 100 |     |    |
| Cw*150201     | 23                         | 7   |     |     |     |    |
| Cw*150202     | 48                         | 39  | 36  | 101 | 23  | 45 |
| Cw*1503       | 54                         | 23  | 7   |     |     |    |
| Cw*1504       | 20                         | 45  | 7   |     |     |    |
| Cw*150501     | 102                        |     |     |     |     |    |
| Cw*150502     | 101                        | 103 | 7   |     |     |    |
| Cw*1506       | 101                        | 7   |     |     |     |    |
| Cw*1507       | 48                         | 39  | 101 | 23  | 45  |    |
| Cw*1508       | 48                         | 39  | 36  | 30  | 101 | 23 |
| Cw*1509       | 101                        | 104 | 45  |     |     |    |
| Cw*1510       | 39                         | 36  | 101 | 23  | 45  |    |
| Cw*1511       | 16                         | 48  | 36  | 101 | 23  | 45 |
| Cw*1601       | 105                        | 106 |     |     |     |    |
| Cw*1602       | 36                         | 105 | 106 |     |     |    |
| Cw*160401     | 107                        | 106 |     |     |     |    |
| Cw*1701       | 108                        |     |     |     |     |    |
| Cw*1702       | 109                        |     |     |     |     |    |
| Cw*1703       | 110                        |     |     |     |     |    |
| Cw*1801       | 111                        | 112 |     |     |     |    |
| Cw*1802       | 62                         | 100 | 111 |     |     |    |

**Table 12-1**

| Allele Number | Probe Number for Detection |    |    |    |    |    |
|---------------|----------------------------|----|----|----|----|----|
| Cw*0102       | 0                          | 1  | 2  | 3  |    |    |
| Cw*0103       | 4                          |    |    |    |    |    |
| Cw*0104       | 5                          | 6  | 7  |    |    |    |
| Cw*0105       | 8                          |    |    |    |    |    |
| Cw*0106       | 9                          |    |    |    |    |    |
| Cw*0107       | 10                         |    |    |    |    |    |
| Cw*0108       | 11                         |    |    |    |    |    |
| Cw*0109       | 12                         |    |    |    |    |    |
| Cw*020201     | 13                         |    |    |    |    |    |
| Cw*020202     | 14                         |    |    |    |    |    |
| Cw*020203     | 15                         | 12 |    |    |    |    |
| Cw*020204     | 16                         | 17 | 18 |    |    |    |
| Cw*020205     | 16                         | 19 | 20 | 17 | 12 | 21 |
| Cw*0203       | 9                          | 21 |    |    |    |    |
| Cw*0204       | 22                         |    |    |    |    |    |
| Cw*0205       | 16                         | 20 | 17 | 12 | 21 |    |
| Cw*0206       | 23                         | 21 |    |    |    |    |
| Cw*030201     | 24                         | 18 |    |    |    |    |
| Cw*030202     | 20                         | 24 |    |    |    |    |
| Cw*030301     | 25                         | 26 | 27 |    |    |    |
| Cw*030302     | 28                         |    |    |    |    |    |
| Cw*030303     | 29                         |    |    |    |    |    |
| Cw*030401     | 26                         | 24 |    |    |    |    |
| Cw*030402     | 26                         | 30 | 31 |    |    |    |
| Cw*0305       | 32                         | 31 |    |    |    |    |
| Cw*0306       | 33                         |    |    |    |    |    |
| Cw*0307       | 34                         | 35 | 26 | 36 | 37 | 31 |
| Cw*0308       | 38                         | 26 | 24 |    |    |    |
| Cw*0309       | 39                         | 26 | 37 | 31 |    |    |
| Cw*0310       | 35                         | 26 | 36 | 37 | 31 |    |
| Cw*0311       | 25                         | 26 |    |    |    |    |

**Table 12-2**

| Allele Number | Probe Number for Detection |    |    |    |    |
|---------------|----------------------------|----|----|----|----|
| Cw*0312       | 25                         | 23 |    |    |    |
| Cw*0313       | 25                         | 27 |    |    |    |
| Cw*0314       | 40                         | 31 |    |    |    |
| Cw*0315       | 41                         | 20 | 37 | 31 |    |
| Cw*0316       | 36                         | 20 | 17 | 42 |    |
| Cw*040101     | 43                         |    |    |    |    |
| Cw*040102     | 44                         |    |    |    |    |
| Cw*0403       | 45                         | 46 |    |    |    |
| Cw*0404       | 47                         | 42 |    |    |    |
| Cw*0405       | 48                         |    |    |    |    |
| Cw*0406       | 45                         | 49 | 42 |    |    |
| Cw*0407       | 50                         | 51 |    |    |    |
| Cw*0408       | 47                         | 37 |    |    |    |
| Cw*0410       | 47                         |    |    |    |    |
| Cw*0501       | 35                         | 52 | 53 |    |    |
| Cw*0502       | 54                         |    |    |    |    |
| Cw*0503       | 55                         |    |    |    |    |
| Cw*0504       | 20                         | 52 | 56 |    |    |
| Cw*0505       | 36                         | 57 | 52 | 56 |    |
| Cw*0506       | 58                         |    |    |    |    |
| Cw*0602       | 59                         | 12 | 7  |    |    |
| Cw*0603       | 60                         | 59 | 20 | 12 |    |
| Cw*0604       | 59                         | 42 |    |    |    |
| Cw*0605       | 61                         | 59 | 20 | 17 |    |
| Cw*0606       | 59                         | 7  |    |    |    |
| Cw*0607       | 62                         |    |    |    |    |
| Cw*0608       | 41                         | 20 | 17 | 12 | 21 |
| Cw*0609       | 59                         | 57 | 12 |    |    |
| Cw*070101     | 63                         | 64 | 65 | 66 |    |
| Cw*070102     | 67                         |    |    |    |    |
| Cw*070201     | 8                          | 64 | 66 |    |    |

**Table 12-3**

| Allele Number | Probe Number for Detection |    |    |       |
|---------------|----------------------------|----|----|-------|
| Cw*0703       | 68                         |    |    |       |
| Cw*070401     | 69                         | 66 |    |       |
| Cw*070402     | 70                         |    |    |       |
| Cw*0705       | 71                         |    |    |       |
| Cw*0706       | 72                         |    |    |       |
| Cw*0707       | 38                         | 35 | 40 | 42    |
| Cw*0708       | 73                         | 40 | 42 |       |
| Cw*0709       | 38                         | 35 | 41 | 40 42 |
| Cw*0710       | 26                         | 8  | 20 | 64 42 |
| Cw*0711       | 69                         | 66 |    |       |
| Cw*0712       | 69                         |    |    |       |
| Cw*0713       | 8                          | 74 | 64 | 42    |
| Cw*0714       | 30                         | 64 | 40 | 42    |
| Cw*0715       | 8                          | 21 |    |       |
| Cw*0716       | 38                         | 40 | 42 |       |
| Cw*0717       | 8                          | 75 |    |       |
| Cw*0718       | 76                         |    |    |       |
| Cw*080101     | 42                         | 53 |    |       |
| Cw*080102     | 30                         | 57 | 77 |       |
| Cw*0802       | 52                         | 53 |    |       |
| Cw*0803       | 78                         | 7  |    |       |
| Cw*0804       | 52                         | 42 | 56 |       |
| Cw*0805       | 51                         | 57 | 52 | 56    |
| Cw*0806       | 79                         | 78 |    |       |
| Cw*0807       | 52                         | 64 | 56 |       |
| Cw*0808       | 80                         | 56 |    |       |
| Cw*0809       | 81                         |    |    |       |
| Cw*120201     | 30                         | 5  | 7  |       |
| Cw*120202     | 30                         | 5  | 6  | 7     |
| Cw*120203     | 63                         | 5  |    |       |
| Cw*120301     | 51                         | 82 | 7  |       |

**Table 12-4**

| Allele Number | Probe Number for Detection |     |    |    |    |    |
|---------------|----------------------------|-----|----|----|----|----|
| Cw*120302     | 83                         | 12  |    |    |    |    |
| Cw*120401     | 84                         | 51  | 35 | 85 | 20 | 17 |
| Cw*120402     | 51                         | 35  | 82 | 7  |    |    |
| Cw*1205       | 35                         | 82  | 7  |    |    |    |
| Cw*1206       | 86                         |     |    |    |    |    |
| Cw*1207       | 87                         |     |    |    |    |    |
| Cw*1208       | 38                         | 30  | 5  | 6  | 7  |    |
| Cw*140201     | 88                         | 20  | 27 |    |    |    |
| Cw*140202     | 88                         | 89  | 20 |    |    |    |
| Cw*1403       | 88                         | 61  | 20 | 27 |    |    |
| Cw*1404       | 88                         | 34  | 89 | 20 | 90 |    |
| Cw*1405       | 88                         | 85  | 20 | 90 |    |    |
| Cw*150201     | 23                         | 7   |    |    |    |    |
| Cw*150202     | 45                         | 38  | 35 | 91 | 23 | 42 |
| Cw*1503       | 51                         | 23  | 7  |    |    |    |
| Cw*1504       | 20                         | 42  | 7  |    |    |    |
| Cw*150501     | 92                         |     |    |    |    |    |
| Cw*150502     | 91                         | 74  | 7  |    |    |    |
| Cw*1506       | 91                         | 7   |    |    |    |    |
| Cw*1507       | 45                         | 38  | 91 | 23 | 42 |    |
| Cw*1508       | 45                         | 38  | 35 | 26 | 91 | 23 |
| Cw*1509       | 91                         | 20  | 42 |    |    |    |
| Cw*1510       | 38                         | 35  | 91 | 23 | 42 |    |
| Cw*1511       | 16                         | 45  | 35 | 91 | 23 | 42 |
| Cw*1601       | 94                         | 95  |    |    |    |    |
| Cw*1602       | 35                         | 94  | 95 |    |    |    |
| Cw*160401     | 12                         | 95  |    |    |    |    |
| Cw*1701       | 96                         |     |    |    |    |    |
| Cw*1702       | 97                         |     |    |    |    |    |
| Cw*1703       | 98                         |     |    |    |    |    |
| Cw*1801       | 99                         | 100 |    |    |    |    |
| Cw*1802       | 59                         | 90  | 99 |    |    |    |

| Allele Number | Probe Number for Detection |     |    |    |    |    |
|---------------|----------------------------|-----|----|----|----|----|
| Cw*120302     | 83                         | 12  |    |    |    |    |
| Cw*120401     | 84                         | 51  | 35 | 85 | 20 | 17 |
| Cw*120402     | 51                         | 35  | 82 | 7  |    |    |
| Cw*1205       | 35                         | 82  | 7  |    |    |    |
| Cw*1206       | 86                         |     |    |    |    |    |
| Cw*1207       | 87                         |     |    |    |    |    |
| Cw*1208       | 38                         | 30  | 5  | 6  | 7  |    |
| Cw*140201     | 88                         | 20  | 27 |    |    |    |
| Cw*140202     | 88                         | 89  | 20 |    |    |    |
| Cw*1403       | 88                         | 61  | 20 | 27 |    |    |
| Cw*1404       | 88                         | 34  | 89 | 20 | 90 |    |
| Cw*1405       | 88                         | 85  | 20 | 90 |    |    |
| Cw*150201     | 23                         | 7   |    |    |    |    |
| Cw*150202     | 45                         | 38  | 35 | 91 | 23 | 42 |
| Cw*1503       | 51                         | 23  | 7  |    |    |    |
| Cw*1504       | 20                         | 42  | 7  |    |    |    |
| Cw*150501     | 92                         |     |    |    |    |    |
| Cw*150502     | 91                         | 74  | 7  |    |    |    |
| Cw*1506       | 91                         | 7   |    |    |    |    |
| Cw*1507       | 45                         | 38  | 91 | 23 | 42 |    |
| Cw*1508       | 45                         | 38  | 35 | 26 | 91 | 23 |
| Cw*1509       | 91                         | 20  | 42 |    |    |    |
| Cw*1510       | 38                         | 35  | 91 | 23 | 42 |    |
| Cw*1511       | 16                         | 45  | 35 | 91 | 23 | 42 |
| Cw*1601       | 94                         | 95  |    |    |    |    |
| Cw*1602       | 35                         | 94  | 95 |    |    |    |
| Cw*160401     | 12                         | 95  |    |    |    |    |
| Cw*1701       | 96                         |     |    |    |    |    |
| Cw*1702       | 97                         |     |    |    |    |    |
| Cw*1703       | 98                         |     |    |    |    |    |
| Cw*1801       | 99                         | 100 |    |    |    |    |
| Cw*1802       | 59                         | 90  | 99 |    |    |    |

(Example 7)

Probes for identification of HLA-DP allele

Extraction of DNA from 1 ml of human blood was performed using GFX Genomic Blood DNA Purification Kit from Amersham Biosciences in the same manner as in Example 1.

Next, quantitative PCR was carried out in the same manner as in Example 1 except that probes in the probe list 1 in Tables 13-1 to 13-3 or 14-1 to 14-3 were used and 3 µl of the mixed primers contains 1 µl of respective solutions of the following primers (10 pmol/µl) :

AAACACGGTCACCTCAGGGGGAT (SEQ ID NO: 2452242)

GGCCTGAGTGTGGTTGGAACG (SEQ ID NO: 2462243)

CCAGCTCGTAGTTGTGTCTGCA (SEQ ID NO: 2472244)

After PCR amplification, referring to Amp Plot and Dissociation curves on a display of 5700 software, and to the list in Table 15-1 for the probes in Table 13-1, or to the list in Tables 15-2 to 15-5 for the probes in Tables 13-2 to 13-3, it was identified as DPA1\*010301 and DPB1\*0901.

(Example 8)

Extraction of DNA from 1 ml of human blood was performed in the same way as in Example 1. PCR of human HLA-DP was then performed in the same manner as in Example 2 except that 6 µl of the mixed primer consisting of 1 µl each of the solutions containing

the following sequences at 10 pmol/ $\mu$ l respectively and 9  $\mu$ l of ultra pure water.

AAACACGGTCACCTCAGGGGGAT (SEQ ID NO: 2452242)

GGCCTGAGTGTGGTTGGAACG (SEQ ID NO: 2462243)

5 CCAGCTCGTAGTTGTCTGCA (SEQ ID NO: 2472244)

CCATGTGTCAACTTATGCC (SEQ ID NO: 2482245)

AGAATTACCTTCCAG (SEQ ID NO: 2502247)

AGAATTACGTTCCAG (SEQ ID NO: 2512248)

At the same time, a DNA microarray was prepared  
10 to identify the allele in the specimen described  
above in the same manner as in Example 2, except that  
probes in Tables 14-1 and 14-2 were used to form the  
probe spots respectively.

Then, hybridization was performed using the  
15 above specimen and the prepared DNA microarray in the  
same manner as in Example 2. Fluorometry measurement  
was conducted with GenePix4000B (Axon). Referring to  
the list in Table 16-1 when the probes in Table 14-1  
were used, or to the list in Tables 16-2 to 16-5 when  
20 the probes in Table 14-2 were used, the sample was  
identified as DPA1\*010301 and DPB1\*0901.

#### Allele list

DPA1\*010301 :

25 ccatgtgtcaacttatgccgcgttgtacagacgcataccaaacaggGagttatgtttgaatttgcata  
gagatgttctatgtggatctggacaagaaggagaccgtctggcatctggaggagtttgccAagcctttccttg  
aggctcaggcggtggcttaacattgctatattgaacaacaacttgaatacccttgcgttcaccacac

tcaggccaccaac (SEQ ID NO: 1-1998) ;

DPA1\*010302 :

gcgtttgtacagacgcatagaccaacaggAgagttatgttgaatttgcataatgtggatc

tggacaagaaggagaccgtctggcatctggaggagttggccaagccttccttgaggctcaggcgggctgc

5 taacattgctatattgaacaacaacttgaatacccttgcatacccggttccaaaccacactcaggccaccaac (SEQ

ID NO: 2-1999) ;

DPA1\*0104 :

gccgcgtttgtacagacgcatagaccaacacaggagttatgttgaatttgcataatgtgg

atctggacaagaaggagaccgtctggcatctggaggagttggccaagccttccttgaggctcaggcgggct

10 ggctaacattgctatattgaacaacaacttgaatacccttgcatacccggttccaaaccacactcaggccaccaac (SE

Q ID NO: 3-2000) ;

DPA1\*0105 :

gccgcgtttgtacagacgcatagaccaacacaggagttatgttgaatttgcataatgtgg

atctggacaagaaggagaccgtctggcatctggaggagttggccaagccttccttgaggctcaggcgggct

15 ggctaacattgctatattgaacaacaacttgaatacccttgcatacccggttccaaaccacactcaggccgcaaT (SE

Q ID NO: 4-2001) ;

DPA1\*0106 :

ccatgtgtcaacttatgccgcgttgtacagacgcatagaccaacacaggagttatgttgaatttgcataatgtggat

gagcagttctatgtggatctggataaAaggagaccgtctggcatctggaggagttggccaagccttccttg

20 aggctcaggcgggctggtaacattgctatattgaacaacaacttgaatacccttgcatacccggttccaaaccacac

tcaggccaccaac (SEQ ID NO: 5-2002) ;

DPA1\*0107 :

catgtgtcaacttatgccgcgttgtacagacgcatagaccaacacaggagttatgttgaatttgcataatgtggat

agatgttctatgtggatctggacaagaaggagaccgtctggcatctggaggagttggccaAaccttccttg

25 ggctcaggcgggctggtaacattgctatattgaacaacaacttgaatacccttgcatacccggttccaaaccacact

caggccaccaac (SEQ ID NO: 6-2003) ;

DPA1\*0108 :

ccatgtgtcaacttatgccgcgttgtacagacgcatagaccaacagggagttatgttgaatttatgtgaat  
 gagatgttctatgtggatctggacaagaaggagaccgtctggcatctggaggagtttgccGagcctttccttg  
 aggctcagggcggctggtaacattgctatattgaacaacaacttgaataccttgcgttcaccac  
 tcaggccaccaac (SEQ ID NO: 7-2004) ;

5 DPA1\*020101 :

ccatgtgtcaacttatgccgcgttgtacagacCcatagaccaacagggagttatgttgaatttatgtgaagat  
 gagcagtctatgtggatctggataAAaggagaccgtctggcatctggaggagtttgccgagcctttccttg  
 aggctcagggcggctggtaacattgctatattgaacaacaacttgaataccttgcgttcaccac  
 tcaggccgccaAT (SEQ ID NO: 8-2005) ;

10 DPA1\*020102 :

ccatgtgtcaacttatgccgcgttgtacagacgcatagaccaacagggagttatgttgaatttatgtgaagat  
 gagcagtctatgtggatctggataAAaggagaccgtctggcatctggaggagtttgccgagcctttccttg  
 aggctcagggcggctggtaacattgctatattgaacaacaacttgaataccttgcgttcaccac  
 tcaggccgccaAT (SEQ ID NO: 9-2006) ;

15 DPA1\*020103 :

ccatgtgtcaacttatgccgcgttgtacagacgcatagaccaacagggagttatgttgaatttatgtgaagat  
 gagcAgttctatgtggatctggacaagaaggagaccgtctggcatctggaggagtttgccgagcctttccttg  
 aggctcagggcggctggtaacattgctatattgaacaacaacttgaataccttgcgttcaccac  
 tcaggccgccaAT (SEQ ID NO: 10-2007) ;

20 DPA1\*020104 :

gcgtttgtacaaaccatagaccaacagggagttatgttgaatttatgtgaagatgagcagtctatgtggatc  
 tggataAAaggagaccgtctggcatctggaggagtttgccgagcctttccttgaggctcagggcggctggc  
 taacattgctatattgaacaacaacttgaataccttgcgttcaccacactcaggccgccaAT (SEQ  
 ID NO: 11-2008) ;

25 DPA1\*020105 :

ccatgtgtcaacttatgccgcgttgtacagacgcatagaccaacaggAgagttatgttgaatttatgtgaagat  
 gagcAgttctatgtggatctggacaagaaggagaccgtctggcatctggaggagtttgccgagcctttccttg

aggctcagggcggtggctaacattgctatattgaacaacaacttgaataccttgcgttccaccacac

tcaggcccaaT (SEQ ID NO: 1-2009) ;

DPA1\*020106 :

ccatgtgtcaacttatgccgcgttgtacagacCcatagaccaacagggagtttatgttgaatttgcgttgc

5 gagcagtctatgtggatctggTaagaaggagaccgtctggcatctggaggagtttgccgagcctttccttg

aggctcagggcggtggctaacattgctatattgaacaacaacttgaataccttgcgttccaccacac

tcaggcccaaT (SEQ ID NO: 1-3-2010) ;

DPA1\*020201 :

aacttatgccatgttgtacagacccatagaccaacaggAgagtttatgttgaatttgcgttgc

10 tatgtggatctggTaagaaggagaccgtctggcatctggaggagtttgccgagcctttccttgaggctcagg

gcgggctggctaacattgctatattgaacaacaacttgaataccttgcgttccaccacactcaggccgc

caaT (SEQ ID NO: 1-4-2011) ;

DPA1\*020202 :

ccatgtgtcaacttatgccatgttgtacagacCcatagaccaacaggAgagtttatgttgaatttgcgttgc

15 gagcAgttctatgtggatctggacaagaaggagaccgtctggcatctggaggagtttgccgagcctttccttg

aggctcagggcggtggctaacattgctatattgaacaacaacttgaataccttgcgttccaccacac

tcaggcccaaT (SEQ ID NO: 1-5-2012) ;

DPA1\*020203 :

atgtgtcaacttatgccaTgttgtacagacccatagaccaacagggagtttatgttgaatttgcgttgc

20 gcagttctatgtggatctggacaagaaggagaccgtctggcatctggaggagtttgccgagcctttccttg

gctcagggcggtggctaacattgctatattgaacaacaacttgaataccttgcgttccaccacactc

aggcccaaT (SEQ ID NO: 1-6-2013) ;

DPA1\*0203 :

ccatgtgtcaacttatgccgcgttgtacagacCcatagaccaacagggagtttatgttgaatttgcgttgc

25 gagatgttctatgtggatctggacaagaaggagaccgtctggcatctggaggagtttgccgagcctttccttg

aggctcagggcggtggctaacattgctatattgaacaacaacttgaataccttgcgttccaccacac

tcaggcccaaT (SEQ ID NO: 1-7-2014) ;

DPA1\*0301 :

gccatttgtacagacccatagaccaacagggagtttatgttgaatttatgtgaaatgtatgtgg  
atctggacaagaaggagaccgtctggcatctggaggagtttgccaaggccttccttgcggctcaggccggct  
ggctaacattgctatatGaacaacaacttgaataccttgcatttgcggctcaggccacactcaggccaccaac (SE

5 Q ID NO: 1-8-2015 ;

DPA1\*0302 :

ccatgtgtcaacttatgccaTgtttgtacagacccatagaccaacagggagtttatgttgaatttatgtgaaat  
gagatgttctatgtggatctggacaagaaggagaccgtctggcatctggaggagtttgccaaggccttccttgc  
aggctcaggccggctgctaacattgctatatGaacaacaacttgaataccttgcatttgcggctcaggccacacac

10 tcaggccaccaac (SEQ ID NO: 1-9-2016) ;

DPA1\*0401 :

gccgcgtttgtacagacgcataGaacaacacaggagtttatgttgcggatgttatgtgatgatgatgatgttctatgtgg  
atctggacaagaaggagaccgtctggcatctggaggagtttgccgaggccttccttgcggctcaggccggct  
ggctaacattgctatatGaacaacaacttgaatacgcTatccagcgttccaaccacactcaggcccaat (SE

15 Q ID NO: 2-0-2017 ;

DPB1\*010101 :

agaattacgtgtaccaggacggcaggaatgtacgcgttaatgggacacacgcgttcctggagagatacatcta  
caaccggaggagtacgcgcgttcgcacagcgacgtggggagttccggcgtgacggagctggggcggctgt  
gcggagtagtggAACAGCCAGAAGGACATCCTGGAGGAGAAGCGGGCAGTGCCGGACAGGAGTAtgcagacacaact

20 acgagctggacgaggccgtgacctgcagcggcagtcc (SEQ ID NO: 2-1-2018) ;

DPB1\*010102 :

aattacgtgtaccaggacggcaggaatgtacgcgttaatgggacacacgcgttcctggagagatacatcta  
accggaggagtacgcgcgttcgcacagcgacgtggAgagttccggcgtgacggagctggggcggctgt  
ggagtagtggAACAGCCAGAAGGACATCCTGGAGGAGAAGCGGGCAGTGCCGGACAGGAGTAtgcagacacaactac

25 gagctggacgaggccgtgacctgcagcggcga (SEQ ID NO: 2-2-2019) ;

DPB1\*020102 (SEQ ID NO: 2-3-2020) :

agaattacctttccaggacggcaggaatgtacgcgttaatgggacacacgcgttcctggagagatacatcta

caaccgggaggagttcgTgcgcttcgacagcgacgtggggagttccggcggtgacggagctggggcggcctgat  
gAggagtactggaacagccagaaggacatcctggaggagGagcggcagtgcggacaggatGtgcagacacaact  
acgagctggGcgccccatgaccctgcagcggcagtc (SEQ ID NO:2-4-2021) ;

DPB1\*020103 :

5 agaattaccccccagggacggcaggaatgtacgcgttaatgggacacagcgcttcctggagagatacatcta  
caaccgggaggagttcgTgcgcttcgacagcgacgtggggagttccggcggtgacggagctggggcggcctgat  
gaggagtactggaacagccagaaggacatcctggaggagcggcagtgcggacaggatgtgcagacacaact  
acgagctggcggccccatgaccctgcagcggcag (SEQ ID NO:2-5-2022) ;

DPB1\*020104 :

10 agaattaccccccagggacggcaggaatgtacgcgttaatgggacacagcgcttcctggagagatacatcta  
caaccgggaggagttcgTgcgcttcgacagcgacgtggggagttccggcggtgacggagctggggcggcctgat  
gaggagtactggaacagccagaaggacatcctggaggagcggcagtTccggacaggatgtgcagacacaact  
acgagctggcggccccatgaccctgcagcggcga (SEQ ID NO:2-6-2023) ;

DPB1\*020105 :

15 agaattaccccccagggacggcaggaatgtacgcgttaatgggacacagcgcttcctggagagatacatcta  
caaccgggAgagttcgTgcgcttcgacagcgacgtggggagttccggcggtgacggagctggggcggcctgat  
gaggagtactggaacagccagaaggacatcctggaggagcggcagtgcggacaggatgtgcagacacaact  
acgagctggcggccccatgaccctgcagcggcag (SEQ ID NO:2-7-2024) ;

DPB1\*020106 :

20 agaattaccccccagggacggcaggaatgtacgcgttaatgggacacagcgcttcctggagagatacatcta  
caaccgggaggagttTgtgcgcttcgacagcgacgtggggagttccggcggtgacggagctggggcggcctgat  
gaggagtactggaacagccagaaggacatcctggaggagcggcagtgcggacaggatgtgcagacacaact  
acgagctggcggccccatgaccctgcagcggcag (SEQ ID NO:2-8-2025) ;

DPB1\*0202 :

25 agaattaccccccagggacggcaggaatgtacgcgttaatgggacacagcgcttcctggagagatacatcta  
caaccgggaggagCtcgtgcgcttcgacagcgacgtggggagttccggcggtgacggagctggggcggcctgat  
gcggaggactggaacagccagaaggacatcctggaggagGagcggcagtgcggacaggatgtgcagacacaact

acgagctggcgccccAtgaccctgcagcggcag (SEQ ID NO: 2-9-2026) ;

DPB1\*030101 :

agaattacgttaccagtTacggcaggaatgtacgcgttaatggcacacagcgcttcctggagagatacatcta  
caaccggaggagttcgTgcgcttcgacagcgacgtggggagttccggcggtgacggagctgggcccgtat

5 gaggatctactggaacagccagaaggacCtcctggaggagaagcggcagtgcggacaggatgcagacacaact  
acgagctggacgaggccgtgaccctgcagcggcagtc (SEQ ID NO: 3-0-2027) ;

DPB1\*030102 :

agaattacgttaccagttacggcaggaatgtacgcgttaatggcacacagcgcttcctggagagatacatcta  
caaccggaggagttcgTgcgcttcgacagcgacgtggggagttccggcggtgacggagctgggcccgtat

10 gaggactactggaacagccagaaggacCtcctggaggagaagcggcagtgcggacaggatgcagacacaact  
acgagctggacgaggccgtgaccctAcagcggcag (SEQ ID NO: 3-1-2028) ;

DPB1\*0401 :

agaattaccccccagggacggcaggaatgtacgcgttaatggcacacagcgcttcctggagagatacatcta  
caaccggaggagttcgTgcgcttcgacagcgacgtggggagttccggcggtgacggagctgggcccgtat

15 gcggagtagtactggaacagccagaaggacatcctggaggagaagcggcagtgcggacaggatGtgcagacacaact  
acgagctggGcggccatgaccctgcagcggcagtc (SEQ ID NO: 3-2-2029) ;

DPB1\*0402 :

agaattaccccccagggacggcaggaatgtacgcgttaatggcacacagcgcttcctggagagatacatcta  
caaccggaggagttcgTgcgcttcgacagcgacgtggggagttccggcggtgacggagctgggcccgtat

20 gAggagtagtactggaacagccagaaggacatcctggaggagaagcggcagtgcggacaggatGtgcagacacaact  
acgagctggGcggccatgaccctgcagcggcagtc (SEQ ID NO: 3-3-2030) ;

DPB1\*0501 :

agaattaccccccagggacggcaggaatgtacgcgttaatggcacacagcgcttcctggagagatacatcta  
caaccggaggagCtcgTgcgcttcgacagcgacgtggggagttccggcggtgacggagctgggcccgtat

25 gcggagtagtactggaacagccagaaggacatcctggaggagaagcggcagtgcggacaggatGtgcagacacaact  
acgagctggacgaggccgtgaccctgcagcggcag (SEQ ID NO: 3-4-2031) ;

DPB1\*0601 :

agaattacgttaccagttacggcaggaatgtacgcgttaatgggacacagcgcttcctggagagatacatcta  
 caaccgggaggagttcgtgcgcttcgacagcgacgtggggagttccggcggtgacggagctggggcggcctgat  
 gaggaGtactggaacagccagaaggacGtcctggaggagGagcggcagtgcggacaggatGtgcagacacaact  
 acgagctggacgaggccgtgaccctgcag (SEQ ID NO:3-5-2032) ;

5 DPB1\*0801 :

cttttcaggacggcaggaatgtacgcgttaatgggacacagcgcttcctggagagatacatctaaccgg  
 aggagttcgtgcgcttcgacagcgacgtggggagttccggcggtgacggagctggggcggcctgatGggagta  
 ctggaacagccagaaggacatcctggaggagGagcggcagtgcggacaggatGcagacacaactacgagctg  
 gacgaggccgtgaccctgcag (SEQ ID NO:3-6-2033) ;

10 DPB1\*0901 :

agaattacgtgcaccagtTacggcaggaatgtacgcgttaatgggacacagcgcttcctggagagatacatcta  
 caaccgggaggagttcgtgcgcttcgacagcgacgtggggagttccggcggtgacggagctggggcggcctgat  
 gaggaGtactggaacagccagaaggacatcctggaggagGagcggcagtgcggacaggatGcagacacaact  
 acgagctggacgaggccgtgaccctgcagccccgag (SEQ ID NO:3-7-2034) ;

15 DPB1\*1001 :

agaattacgtgcaccagtTacggcaggaatgtacgcgttaatgggacacagcgcttcctggagagatacatcta  
 caaccgggaggagttcgtgcgcttcgacagcgacgtggggagttccggcggtgacggagctggggcggcctgat  
GggagtatactggaacagccagaaggacatcctggaggagGagcggcagtgcggacaggatGcagacacaact  
 acgagctggacgaggccgtgaccctgcagccccgag (SEQ ID NO:3-8-2035) ;

20 DPB1\*110101 :

gtgtaccagttacggcaggaatgtacgcgttaatgggacacagcgcttcctggagagatacatctaaccggG  
 aggagtagcgcgccttcgacagcgacgtggagagttccggcggtgacggagctggggcggcctgctgaggaga  
 ctggaacagccagaaggacatcctggaggagaggcggcagtgcggacaggatGcagacacaactacgagctg  
 gacgaggccgtgaccctgcag (SEQ ID NO:3-9-2036) ;

25 DPB1\*110102 :

agaattacgttaccagttacggcaggaatgtacgcgttaatgggacacagcgcttcctggagagatacatcta  
 caacAggcaggagtagcgcgccttcgacagcgacgtggagagttccggcggtgacggagctggggcggcctgct

gcggagtagtggAACAGCCAGAAGGACCTCCTGGAGGAAGGGCGGGCAGTGCACAGGATGTGCAGACACAACT  
 acgagctggacgaggccgtgaccctgcag (SEQ ID NO: 4-0-2037) ;  
 DPB1\*1301 :  
 agaattacgtgtaccagtAcggcaggaatgtacgcgttaatggcacacagcgcttcctggagagatacatcta  
 5 caaccggaggagtacgcgcgttcgacagcgacgtggggagttccggcgtgacggagctggggccgtctgt  
 gcggagtagtggAACAGCCAGAAGGACATCCTGGAGGAAGCGGGCAGTGCACAGGATATGCAGACACAACT  
 acgagctggacgaggccgtgaccctgcag (SEQ ID NO: 4-1-2038) ;  
 DPB1\*1401 :  
 agaattacgtgcaccagtAcggcaggaatgtacgcgttaatggcacacagcgcttcctggagagatacatcta  
 10 caaccggaggagttcgTgcgcgttcgacagcgacgtggggagttccggcgtgacggagctggggccgtctgt  
 gaggaCtactggAACAGCCAGAAGGACATCCTGGAGGAAGCGGGCAGTGCACAGGATATGCAGACACAACT  
 acgagctggacgaggccgtgaccctgcag (SEQ ID NO: 4-2-2039) ;  
 DPB1\*1501 :  
 agaattacgtgtaccaggAACGGCAGGAATgtacgcgttaatggcacacagcgcttcctggagagatacatcta  
 15 caaccggCaggagtacgcgcgttcgacagcgacgtggggagttccggcgtgacggagctggggccgtctgt  
 gcggagtagtggAACAGCCAGAAGGACATCCTGGAGGAAGCGGGCAGTGCACAGGATGTGCAGACACAACT  
 acgagctggcgtggccccAtgaccctgcagcggcag (SEQ ID NO: 4-3-2040) ;  
 DPB1\*1601 :  
 agaattaccccccaggAACGGCAGGAATgtacgcgttaatggcacacagcgcttcctggagagatacatcta  
 20 caaccggaggagttcgTgcgcgttcgacagcgacgtggggagttccggcgtgacggagctggggccgtctgt  
 gAggagtactggAACAGCCAGAAGGACATCCTGGAGGAAGCGGGCAGTGCACAGGATGTGCAGACACAACT  
 acgagctggacgaggccgtgaccctgcagcggcag (SEQ ID NO: 4-4-2041) ;  
 DPB1\*1701 :  
 agaattacgtgcaccagtAcggcaggaatgtacgcgttaatggcacacagcgcttcctggagagatacatcta  
 25 caaccggaggagttcgTgcgcgttcgacagcgacgtggggagttccggcgtgacggagctggggccgtctgt  
 gaggaCtactggAACAGCCAGAAGGACATCCTGGAGGAAGCGGGCAGTGCACAGGATGTGCAGACACAACT  
 acgagctggacgaggccgtgaccctgcagcggcag (SEQ ID NO: 4-5-2042) ;

DPB1\*1801 :

gtgtaccaggacggcaggaatgctacgcgttaatggcacacagcgcttcgtggagagatacatacaaccggg  
 aggagttcgTgcgcgttcgacagcgacgtggggagttccggcggtgacggagctggggcgccctgatgAggaga  
 ctggAACAGCCAGAAGGACATCCTGGAGGAGAACGGGCAGTGCCGGACAGGATGTGCAGACACAACGAGCTG  
 5 gTcgggccatgaccctgcag (SEQ ID NO: 4-6-2043) ;

DPB1\*1901 :

agaattaccccccggacggcaggaatgctacgcgttaatggcacacagcgcttcgtggagagatacatcta  
 caaccgggaggagttcgtgcgcgttcgacagcgacgtggggagttccggcggtgacggagctggggcgccctgatg  
 gcggagacttggAACAGCCAGAAGGACATCCTGGAGGAGAGCGGGCAGTGCCGGACAGGAtatgcagacacaact  
 10 acgagctggacgaggccgtgaccctgcagcggcag (SEQ ID NO: 4-7-2044) ;

DPB1\*200101 :

agaattacgtgtaccaggtaacggcaggaatgctacgcgttaatggcacacagcgcttcgtggagagatacatcta  
 caaccgggaggagttcgtgcgcgttcgacagcgacgtggggagttccggcggtgacggagctggggcgccctgat  
 gaggaCtactggAACAGCCAGAAGGACATCCTGGAGGAGAGCGGGCAGTGCCGGACAGGAtgtcagacacaact  
 15 acgagctggacgaggccgtgaccctgcagcggcag (SEQ ID NO: 4-8-2045) ;

DPB1\*200102 :

agaattacgtgtaccaggtaacggcaggaatgctacgcgttaatggcacacagcgcttcgtggagagatacatcta  
 caaccgggaggagttcgtgcgcgttcgacagcgacgtggggagttccggcggtgacggagctggggcgccctgat  
 gaggaCtactggAACAGCCAGAAGGACATCCTGGAGGAGAGCGGGCAGTGCCGGACAGGAtgtcagacacaact  
 20 acgagctggacgaggccgtgaccctgcagcgTcga (SEQ ID NO: 4-9-2046) ;

DPB1\*2101 :

agaattacgtgtaccaggtaacggcaggaatgctacgcgttaatggcacacagcgcttcgtggagagatacatcta  
 caaccgggaggagCtctgtgcgcgttcgacagcgacgtggggagttccggcggtgacggagctggggcgccctgatg  
 gcggagacttggAACAGCCAGAAGGACATCCTGGAGGAGAGCGGGCAGTGCCGGACAGGAtgtcagacacaact  
 25 acgagctggacgaggccgtgaccctgcagcggcag (SEQ ID NO: 5-0-2047) ;

DPB1\*2201 :

agaattaccccccggacggcaggaatgctacgcgttaatggcacacagcgcttcgtggagagatacatcta

caaccgggaggagCtcgtgcgcttcgacagcgacgtggggagttccggcggtgacggagctggggcggcctgaG  
gcggagactggaacagccagaaggacatcctggaggagGagcggcagtgcggacaggatGtgcagacacaact  
acgagctggacgaggcccgtaccctgcagcggcag (SEQ ID NO:~~5-1-2048~~) ;

DPB1\*2301 :

5 agaattacctttccagggacggcaggaatgctacgcgttaatgggacacagcgcttcctggagagatacatcta  
caaccgggaggagttcgTgcgcttcgacagcgacgtggggagttccggcggtgacggagctggggcggcctgtc  
gcggagactggaacagccagaaggacatcctggaggagaagcggcagtgcggacaggatGtgcagacacaact  
acgagctggGcgggccccatgaccctgcagcggcag (SEQ ID NO:~~5-2-2049~~) ;

DPB1\*2401 :

10 agaattacctttccagggacggcaggaatgctacgcgttaatgggacacagcgcttcctggagagatacatcta  
caaccgggaggagttcgcgccgttcgacagcgacgtggggagttccggcggtgacggagctggggcggcctgaG  
gcggagactggaacagccagaaggacatcctggaggagaagcggcagtgcggacaggatgtcagacacaact  
acgagctggcggcccccAtgaccctgcagcggcag (SEQ ID NO:~~5-3-2050~~) ;

DPB1\*2501 :

15 agaattacgtgtaccagtTacggcaggaatgctacgcgttaatgggacacagcgcttcctggagagatacatcta  
caaccgggaggagttcgTgcgcttcgacagcgacgtggggagttccggcggtgacggagctggggcggcctgt  
gAggagactggaacagccagaaggacCtcctggaggagaagcggcagtgcggacaggatgtcagacacaact  
acgagctggacgaggccgtaccctgcagcggcag (SEQ ID NO:~~5-4-2051~~) ;

DPB1\*260101 :

20 gtgtaccagttacggcaggaatgctacgcgttaatgggacacagcgcttcctggagagatacatctacaaccgg  
aggagtacgcgcgttcgacagcgacgtggagagttccggcggtgacggagctggggcggcctgtcggagata  
ctggAACAGCCAGAAGGACATCTGGAGGAGAAAGCGGGCAGTGCCGGACAGAGtatgcagacacaactacgagctg  
gacgaggccgtgaccctgcagcggcag (SEQ ID NO:~~5-5-2052~~) ;

DPB1\*260102 :

25 gtgtaccagttacggcaggaatgctacgcgttaatgggacacagcgcttcctggagagatacatctacaaccgg  
aggagtacgcgcgttcgacagcgacgtggggagttccggcggtgacggagctggggcggcctgtcggagata  
ctggAACAGCCAGAAGGACATCTGGAGGAGAAAGCGGGCAGTGCCGGACAGGGTATGCAGACACAACTACGAGCTG

gacgaggccgtgaccctgcagcggcg (SEQ ID NO: 5-6-2053) ;

DPB1\*2701 :

agaattacgtgtaccagtTacggcaggaatgtacgcgttaatgggacacagcgcttcctggagagatacatcta  
caaccggaggagtacgcgcgttcgacagcgacgtggggagttccggcggtgacggagctgggcccgtctgt  
5 gcggagacttggaaacagccagaaggacatcctggaggagaagcggcagtgcggacaggatGtgcagacacaact  
acgagctggacgaggccgtgaccctgcagcggcg (SEQ ID NO: 5-7-2054) ;

DPB1\*2801 :

agaattaccccccagggacggcaggaatgtacgcgttaatgggacacagcgcttcctggagagatacatcta  
caaccggaggagttcgcgcgttcgacagcgacgtggggagttccggcggtgacggagctgggcccgtctgt  
10 gAggagacttggaaacagccagaaggacCtcctggaggagaagcggcagtgcggacaggatgtcagacacaact  
acgagctggTcgggccatgaccctgcagcggcg (SEQ ID NO: 5-8-2055) ;

DPB1\*2901 :

agaattacgtgtaccagtacggcaggaatgtacgcgttaatgggacacagcgcttcctggagagatacatcta  
caaccggaggagttcgtgcgcgttcgacagcgacgtggggagttccggcggtgacggagctgggcccgtctgt  
15 gaggaCtactggaaacagccagaaggacCtcctggaggagGagcggcagtgcggacaggatgtcagacacaact  
acgagctggacgaggccgtgaccctgcagcggcg (SEQ ID NO: 5-9-2056) ;

DPB1\*3001 :

agaattacgtgcaccagtTacggcaggaatgtacgcgttaatgggacacagcgcttcctggagagatacatcta  
caaccggaggagttcgtgcgcgttcgacagcgacgtggggagttccggcggtgacggagctgggcccgtctgt  
20 gcggagacttggaaacagccagaaggacatcctggaggagGagcggcagtgcggacaggatGtgcagacacaact  
acgagctggacgaggccgtgaccctgcag (SEQ ID NO: 6-0-2057) ;

DPB1\*3101 :

agaattaccccccagggacggcaggaatgtacgcgttaatgggacacagcgcttcctggagagatacatcta  
caaccggaggagttcgcgcgttcgacagcgacgtggggagttccggcggtgacggagctgggcccgtctgt  
25 gcggagacttggaaacagccagaaggacatcctggaggagaagcggcaTtgccggacaggatgtcagacacaact  
acgagctggacgaggccgtgaccctgcagcggcg (SEQ ID NO: 6-1-2058) ;

DPB1\*3201 :

agaattaccccccagggacggcaggaatgtacgcgttaatgggacacagcgcttcggagagatacatcta  
 caaccggaggagttcggtcgcttcgacagcgacgtggggagttccggcggtgacggagctggggcgccctgtat  
 gaggTgtactggaacagccagaaggacatcctggaggagggcagtgcggacaggatgtcagacacaact  
 acgagctggcgccccatgaccctgcagcggcag (SEQ ID NO: 6-2-2059) ;

5 DPB1\*3301 :

agaattaccccccagggacggcaggaatgtacgcgttaatgggacacagcgcttcggagagatacatcta  
 caaccggaggagttcggtcgcttcgacagcgacgtggggagttccggcggtgacggagctggggcgccctgtat  
 gcggagtagtggaaacagccagaaggacatcctggaggagGagcggcagtgcggacaggatGtgcagacacaact  
 acgagctggGcgccccatgaccctgcag (SEQ ID NO: 6-3-2060) ;

10 DPB1\*3401 :

agaattaccccccagggacggcaggaatgtacgcgttaatgggacacagcgcttcggagagatacatcta  
 caaccggaggagtcgtcgcttcgacagcgacgtggggagttccggcggtgacggagctggggcgccctgtat  
 gcggagtagtggaaacagccagaaggacatcctggaggagaagcggcaTgcggacaggatgtcagacacaact  
 acgagctggcgccccAtgaccctgcag (SEQ ID NO: 6-4-2061) ;

15 DPB1\*3501 :

agaattacgtgcaccagtAcggcaggaatgtacgcgttaatgggacacagcgcttcggagagatacatcta  
 caaccggaggagttcgTgcgcttcgacagcgacgtggggagttccggcggtgacggagctggggcgccctgtat  
 gaggaCtactggaacagccagaaggacatcctggaggagaagcggcagtgcggacaggatgtcagacacaact  
 acgagctggacgaggccgtgaccctgcag (SEQ ID NO: 6-5-2062) ;

20 DPB1\*3601 :

agaattacgtgtaccagtAcggcaggaatgtacgcgttaatgggacacagcgcttcggagagatacatcta  
 caaccggaggagCtcgTgcgcttcgacagcgacgtggggagttccggcggtgacggagctggggcgccctgtat  
 gcggagtagtggaaacagccagaaggacatcctggaggagaagcggcagtgcggacaggatGtgcagacacaact  
 acgagctggacgaggccgtgaccctgcagcggcag (SEQ ID NO: 6-6-2063) ;

25 DPB1\*3701 :

gtgtaccagttacggcaggaatgtacgcgttaatgggacacagcgcttcggagagatacatcacaaccgg  
 aggagttcgTgcgcttcgacagcgacgtggggagttccggcggtgacggagctggggcgccctgtatAggagta

ctggAACAGCCAGAAGGACATCCTGGAGGGAGCGGGCAGTGCCGGACAGGGTATGCAGACACAACGAGCTG  
 gacgaggccgtgaccctgcagcggcag (SEQ ID NO: 6-7-2064) ;

**DPB1\*3801 :**

ctttccaggacggcaggaatgtacCcgTTAATGGACACAGCGCTCCTGGAGAGATACTACAACCGGG  
 5 agtagtcgtgcgcTTcgacagcgacgtggggagttccggcggtacggagctggggcggcgtggcggagta  
 ctggAACAGCCAGAAGGACATCCTGGAGGGAGCGGGCAGTGCCGGACAGGATGTGCAGACACAACGAGCTG  
 gacgaggccgtgaccctgcag (SEQ ID NO: 6-8-2065) ;

**DPB1\*3901 :**

agaattaccccccaggacggcaggaatgtacgcgttAAATGGACACAGCGCTCCTGGAGAGATACTACTA  
 10 caaccggaggagtacgcgcgttcgacagcgacgtggggagttccggcggtacggagctggggcggcgt  
 gcggagtagtggAACAGCCAGAAGGACATCCTGGAGGGAGCGGGCAGTGCCGGACAGGATGTGCAGACACA  
 acgagctggGcgccccatgaccctgcagcggcga (SEQ ID NO: 6-9-2066) ;

**DPB1\*4001 :**

agaattaccccccaggacggcaggaatgtacgcgttAAATGGACACAGCGCTCCTGGAGAGATACTACTA  
 15 caaccggaggagtacgcgcgttcgacagcgacgtggggagttccggcggtacggagctggggcggcgt  
 gcggagtagtggAACAGCCAGAAGGACATCCTGGAGGGAGCGGGCAGTGCCGGACAGGATGTGCAGACACA  
 acgagctggTcgccccatgaccctgcagcggcga (SEQ ID NO: 7-0-2067) ;

**DPB1\*4101 :**

aattaccccccaggacggcaggaatgtacgcgttAAATGGACACAGCGCTCCTGGAGAGATACTACTA  
 20 accggaggagttcgtgcgttcgacagcgacgtggggagttccggcggtacggagctggggcggcgt  
 ggagtagtggAACAGCCAGAAGGACATCCTGGAGGGAGCGGGCAGTGCCGGACAGGATGTGCAGACACA  
 gagctggcgccccatgaccctgcagcggcga (SEQ ID NO: 7-1-2068) ;

**DPB1\*4401 :**

agaattacgtgtaccaggtaacggcaggaatgtacgcgttAAATGGACACAGCGCTCCTGGAGAGATACTACTA  
 25 caaccggaggagCtcgtgcgcTTcgacagcgacgtggggagttccggcggtacggagctggggcggcgt  
 gaggactactggAACAGCCAGAAGGACATCCTGGAGGGAGCGGGCAGTGCCGGACAGGATGTGCAGACACA  
 acgagctggacgaggccgtgaccctgcagcggcga (SEQ ID NO: 7-2-2069) ;

DPB1\*4501 :

gtgcaccagttacggcaggaatgctacgcgttaatggcacacagcgcttcgtggagagatacatctacaaccggg  
 aggagttcgTgcgcgttcgacagcgacgtggggagttccggcggtgacggagctggggcgccctgatgAggaga  
 ctggaacagccagaaggacCtccctggaggagaagcggcagtgccggacaggatgtcagacacaactacgagctg  
 5 gacgaggccgtgaccctgcag (SEQ ID NO: 7-3-2070) ;

DPB1\*4601 :

agaattaccccccagggacggcaggaatgctacgcgttaatggcacacagcgcttcgtggagagatacatcta  
 caaccgggaggagttcgtgcgcgttcgacagcgacgtggggagttccggcggtgacggagctggggcgccctgat  
 gaggaCtactggaacagccagaaggacatccctggaggagGagcggcagtgccggacaggatgtcagacacaact  
 10 acgagctggcgggcccAtgaccctgcagcggcag (SEQ ID NO: 7-4-2071) ;

DPB1\*4701 :

agaattaccccccagggacggcaggaatgctacgcgttaatggcacacagcgcttcgtggagagatacatcta  
 caaccgggaggagttcgtgcgcgttcgacagcgacgtggggagttccggcggtgacggagctggggcgccctgatg  
 gcggagactggaacagccagaaggacatccctggaggagGagcggcagtgccggacaggatgtcagacacaact  
 15 acgagctggcgggcccAtgaccctgcagcggcag (SEQ ID NO: 7-5-2072) ;

DPB1\*4801 :

aattaccccccagggacggcaggaatgctacgcgttaatggcacacagcgcttcgtggagagatacatctaca  
 accgggaggagCtcgtgcgcgttcgacagcgacgtggggagttccggcggtgacggagctggggcgccctgatgA  
 ggagactggaacagccagaaggacatccctggaggagcggcagtgccggacaggatgtcagacacaactac  
 20 gagctggGcgggcccAtgaccctgcag (SEQ ID NO: 7-6-2073) ;

DPB1\*4901 :

aattaccccccagggacggcaggaatgctacgcgttaatggcacacagcgcttcgtggagagatacatctaca  
 accgggaggagtcgcgcgttcgacagcgacgtggggagttccggcggtgacggagctggggcgccctgatgA  
 ggagactggaacagccagaaggacatccctggaggagaagcggcagtgccggacaggatGtgcagacacaactac  
 25 gagctggGcgggcccAtgaccctgcag (SEQ ID NO: 7-7-2074) ;

DPB1\*5001 :

aattacgtgtaccaggacggcaggaatgctacgcgttaatggcacacagcgcttcgtggagagatacatctaca

accgggaggagttcgTgcgttcgacagcgacgtggggagttccgggggtgacggagctggggcggcgtatga  
 ggaGtactggaacagccagaaggacCtcctggaggagaagcgggcagtgcggacaggatgcagacacaactac  
 gagctggacgaggccgtgaccctgcag (SEQ ID NO:7-8-2075) ;

DPB1\*5101 :

5     agaattacctttccagggacggcaggaatgtacgcgttaatgggacacagcgcttcctggagagatacatcta  
 caaccggaggagtTgcgcgcgttcgacagcgacgtggggagttccgggggtgacggagctggggcggcgtat  
 gAggagtagtactggaacagccagaaggacatcctggaggagaagcgggcagtgcggacaggatGtgcagacacaact  
 acgagctggGcgggccccatgaccctgcagcggcgg (SEQ ID NO:7-9-2076) ;

DPB1\*5201 :

10    agaattacgtgtaccagtTacggcaggaatgtacgcgttaatgggacacagcgcttcctggagagatacatcta  
 caaccggaggagtTgcgcgttcgacagcgacgtggggagttccgggggtgacggagctggggcggcgtat  
 gcggagtagtactggaacagccagaaggacCtcctggaggagaagcgggcagtgcggacaggatgcagacacaact  
 acgagctggacgaggccgtgaccctgcag (SEQ ID NO:8-0-2077) ;

DPB1\*5301 :

15    agaattacctttccagggacggcaggaatgtacgcgttaatgggacacagcgcttcctggagagatacatcta  
 caaccggaggagtacgcgcgttcgacagcgacgtggggagttccgggggtgacggagctggggcggcgtat  
 gAggagtagtactggaacagccagaaggacatcctggaggagaagcgggcagtgcggacaggatgtgcagacacaact  
 acgagctggTcgggccccatgaccctgcag (SEQ ID NO:8-1-2078) ;

DPB1\*5401 :

20    agaattacgtgcaccagtTacggcaggaatgtacgcgttaatgggacacagcgcttcctggagagatacatcta  
 caaccggaggagtTcgtgcgcgttcgacagcgacgtggggagttccgggggtgacggagctggggcggcgtat  
 gcggagtagtactggaacagccagaaggacatcctggaggagGagcgggcagtgcggacaggatgcagacacaact  
 acgagctggacgaggccgtgaccctgcag (SEQ ID NO:8-2-2079) ;

DPB1\*5501 :

25    agaattacgtgcaccagtTacggcaggaatgtacgcgttaatgggacacagcgcttcctggagagatacatcta  
 caaccggaggagtTgcgttcgacagcgacgtggggagttccgggggtgacggagctggggcggcgtat  
 gcggagtagtactggaacagccagaaggacatcctggaggagGagcgggcagtgcggacaggatGtgcagacacaact

acgagctggacgaggccgtgaccctgcag (SEQ ID NO: 8-3-2080) ;

DPB1\*5601 :

gtgtaccagttacggcaggaatgctacgcgttaatgggacacagcgcttgcggagatacatctacaaccggg

aggagtTcgcgcgcttcgacagcgtggggagttccggcggtgacggagctgggcccgtgcggagta

5 ctggAACAGCCAGAAGGAC0tcctggaggagaagcggcagtgccggacagggtatgcagacacaactacgagctg

gacgaggccgtgaccctgcag (SEQ ID NO: 8-4-2081) ;

DPB1\*5701 :

ctttccagggacggcaggaatgctacgcgttaatgggacacagcgcttgcggagatacatctacaaccggg

aggagttcgTcgcgcttcgacagcgtggggagttccggcggtgacggagctgggcccgtatgagga0ta

10 ctggAACAGCCAGAAGGAC0tcctggaggagaagcggcagtgccggacagggtatgcagacacaactacgagctg

gacgaggccg (SEQ ID NO: 8-5-2082) ;

DPB1\*5801 :

aattacgtgcaccagttacggcaggaatgctacgcgttaatgggacacagcgcttgcggagatacatctaca

accgggaggag0tcgtgcgcttcgacagcgtggggagttccggcggtgacggagctgggcccgtgc

15 ggagtactggaacagccagaaggacatcctggaggagGagcggcagtgccggacaggatGtgcagacacaactac

gagctggacgaggccgtgaccctgcag (SEQ ID NO: 8-6-2083) ;

DPB1\*5901 :

agaattacccccccatgaccctgcag (SEQ ID NO: 8-7-2084) ;

caaccgggaggagttcgtgcgcttcgacagcgtggggagttccggcggtgacggagctgggcccgtat

20 gAggagtactggaacagccagaaggac0tcctggaggagaagcggcagtgccggacaggatGtgcagacacaact

acgagctggGcgccccatgaccctgcag (SEQ ID NO: 8-8-2084) ;

DPB1\*6001 :

agaattacccccccatgaccctgcag (SEQ ID NO: 8-9-2085) ;

caaccgggaggagttcgtgcgcttcgacagcgtggggagttccggcggtgacggagctgggcccgtat

25 gaggagtactggaacagccagaaggacaAcctggaggagaagcggcagtgccggacaggatgtgcagacacaact

acgagctggcgccccatgaccctgcag (SEQ ID NO: 8-10-2085) ;

DPB1\*6101N :

agaattacgttaccagttacggcaggaatgtacgcgttaatgggacacagcgcttcggagagatacatcta  
 caaccggaggagttcggtgcgcgttcgacagcgacgtggggagttccggcggtgacggagctggggcgccctgt  
 gaggactactggaacagccagaaggacccctgttaggagaagcggcagtgcggacaggatgcagacacaact  
 acgagctggacgaggccgtgaccctgcagcgc (SEQ ID NO:~~8-9-2086~~) ;

5 DPB1\*6201 :  
 agaattaccccccagggacggcaggaatgtacgcgttaatgggacacagcgcttcggagagatacatcta  
 caaccggaggagCtcgTgcgcgttcgacagcgacgtggggagttccggcggtgacggagctggggcgccctgt  
 gcggagactggaacagccagaaggacatccctggaggagaagcggcagtgcggacaggatgtgcagacacaact  
 acgagctggTcgccccatgaccctgcag (SEQ ID NO:~~9-0-2087~~) ;

10 DPB1\*6301 :  
 aattaccccccagggacggcaggaatgtacgcgttaatgggacacagcgcttcggagagatacatctaca  
 accggaggagCtcgtgcgcgttcgacagcgacgtggggagttccggcggtgacggagctggggcgccctgt  
 ggagactggaacagccagaaggacatccctggaggagaagcggcagtgcggacaggatGtgcagacacaactac  
 gagctggacgaggccgtgaccctgcag (SEQ ID NO:~~9-1-2088~~) ;

15 DPB1\*6401N :  
 aattaagtgtaccagttacggcaggaatgtacgcgttaatgggacacagcgcttcggagagatacatctaca  
 accggaggagttcgtgcgcgttcgacagcgacgtggggagttccggcggtgacggagctggggcgccctgtatga  
 ggaGtactggaacagccagaaggacCtcctggaggagGagcggcagtgcggacaggatGtgcagacacaactac  
 gagctggacgaggccgtgaccctgcag (SEQ ID NO:~~9-2-2089~~) ;

20 DPB1\*6501 :  
 agaattaccccccagggacggcaggaatgtacgcgttaatgggacacagcgcttcggagagatacatcta  
 caaccggaggagtagcgcgcgttcgacagcgacgtggggagttccggcggtgacggagctggggcgccctgt  
 gcggagactggaacagccagaaggacatccctggaggagaagcggcagtgcggacaggatgcagacacaact  
 acgagctggacgaggccgtgaccctgcagcggc (SEQ ID NO:~~9-3-2090~~) ;

25 DPB1\*6601 :  
 agaattacgtgcaccagtacggcaggaatgtacgcgttaatgggacacagcgcttcggagagatacatcta  
 caaccggaggagtgcgccgttcgacagcgacgtggggagttccggcggtgacggagctggggcgccctgt

gcggagtagtggAACAGCCAGAAGGACATCCTGGAGGAAGCGGGCAGTGCACAGGATGTCAGACACAACT  
 acgagctggGcgccccatgaccctgcagcggcag (SEQ ID NO:9-4-2091) ;

**DPB1\*6701 :**  
 agaattacgtgcaccagtAcggcaggaatgtacgcgttaatggcacacagcgcttcctggagagatacatcta  
 5 caaccggaggagttcgTgcgcttcgacagcgacgtggggagttccggcggtgacggagctggggcggcctgt  
 gcggagtagtggAACAGCCAGAAGGACGTCCTGGAGGAAGCGGGCAGTGCACAGGATGTCAGACACAACT  
 acgagctggacgaggccgtgaccctgcagcggcag (SEQ ID NO:9-5-2092) ;

**DPB1\*6801 :**  
 agaattacctttccaggacggcaggaatgtacgcgttaatggcacacagcgcttcctggagagatacatcta  
 10 caaccggaggagttcgTgcgcttcgacagcgacgtggggagttccggcggtgacggagctggggcggcctgt  
 gAggagtagtggAACAGCCAGAAGGACATCCTGGAGGAAGCGGGCAGTGCACAGGATGTCAGACACAACT  
 acgagctggacgaggccgtgaccctgcagcggcga (SEQ ID NO:9-6-2093) ;

**DPB1\*6901 :**  
 agaattacgtgtaccagttaacggcaggaatgtacgcgttaatggcacacagcgcttcctggagagatacatcta  
 15 caaccggaggagttcgTgcgcttcgacagcgacgtggggagttccggcggtgacggagctggggcggcctgt  
 gaggaGtactggAACAGCCAGAAGGACATCCTGGAGGAAGCGGGCAGTGCACAGGATGTCAGACACAACT  
 acgagctggacgaggccgtgacc (SEQ ID NO:9-7-2094) ;

**DPB1\*7001 :**  
 aattacgtggaccagttaacggcaggaatgtacgcgttaatggcacacagcgcttcctggagagatacatctaca  
 20 accggaggagttcgTgcgcttcgacagcgacgtggggagttccggcggtgacggagctggggcggcctgt  
 ggaGtactggAACAGCCAGAAGGACGTCCTGGAGGAAGCGGGCAGTGCACAGGATGTCAGACACAACT  
 gagctggacgaggccgtgaccctgcag (SEQ ID NO:9-8-2095) ;

**DPB1\*7101 :**  
 aattacctttccaggacggcaggaatgtacgcgttaatggcacacagcgcttcctggagagatacatctaca  
 25 accggaggagttcgTgcgcttcgacagcgacgtggggagttccggcggtgacggagctggggcggcctgt  
 ggagtagtggAACAGCCAGAAGGACATCCTGGAGGAAGCGGGCAGTGCACAGGATGTCAGACACAACT  
 gagctggGcgccccatgaccctgcag (SEQ ID NO:9-9-2096) ;

DPB1\*7201 :

aattaccccccagggacggcaggaatgctacgcgttaatggcacacagcgcttcggagagatacatctaca  
 accgggaggagttcgccgcgttcgacagcgacgtggggagttccggcgtgacggagctggggcgcctgctgc  
 ggagtactggaacagccagaaggacCtcctggaggagaagcggcagtgccggacaggatGtgcagacacaactac  
 5 gagctggGcgggccccatgaccctgcag (SEQ ID NO:1-0-0-2097) ;

DPB1\*7301 :

aattaccccccagggacggcaggaatgctacgcgttaatggcacacagcgcttcggagagatacatctaca  
 accgggaggagttcgccgcgttcgacagcgacgtggggagttccggcgtgacggagctggggcgcctgatgA  
 ggagtactggaacagccagaaggacCtcctggaggagaagcggcagtgccggacaggatgtcagacacaactac  
 10 gagctggGcgggccccatgaccctgcag (SEQ ID NO:1-0-1-2098) ;

DPB1\*7401 :

gtgtaccagttacggcaggaatgctacgcgttaatggcacacagcgcttcggagagatacatctacaaccggC  
 aggagtacgcgcgttcgacagcgacgtggagagttccggcgtgacggagctggggcgcctgctgcccggagta  
 ctggaacagccagaaggacccctggaggagaggcggcagtgccggacaggatgtcagacacaactacgagctg  
 15 gtcgggccccatgaccctgcag (SEQ ID NO:1-0-2-2099) ;

DPB1\*7501 :

cgtttccagggacggcaggaatgctacgcgttaatggcacacagcgcttcggagagatacatctacaaccgg  
 aggagttcgTgcgcgttcgacagcgacgtggggagttccggcgtgacggagctggggcgcctgatgAggagta  
 ctggaacagccagaaggacccctggaggagaagcggcagtgccggacaggatgtcagacacaactacgagctg  
 20 gGcgggccccatgaccctgcag (SEQ ID NO:1-0-3-2100) ;

DPB1\*7601 :

agaattacgtgcaccagtTacggcaggaatgctacgcgttaatggcacacagcgcttcggagagatacatcta  
 caaccggaggagttcgccgcgttcgacagcgacgtggggagttccggcgtgacggagctggggcgcctgat  
 gaggaCtactggaacagccagaaggacCtcctggaggagaagcggcagtgccggacaggatgtcagacacaact  
 25 acgagctggacgaggccgtgaccctgcag (SEQ ID NO:1-0-4-2101) ;

DPB1\*7701 :

agaattaccccccagggacTgcaggaatgctacgcgttaatggcacacagcgcttcggagagatacatcta

caaccgggaggagttcgtgcgcttcgacagcgacgtggggagttccggcggtgacggagctggggcgccctgat  
 gaggagtactggaacagccagaaggacatcctggaggagaagcgggcagtgcggacaggatgtcagacacaact  
 acgagctggcgccccatgaccctgcagcggcag (SEQ ID NO:~~1-0-5~~2102) ;

DPB1\*7801 :

5 agaattacgttaccagttacggcaggaatgtacgcgttaatgggacacagcgcttcctggagagatacatcta  
 caaccgggaggagttcgtgcgcttcgacagcgacgtggggagttccggcggtgacggagctggggcgccctgat  
 gaggactactggaacagccagaaggacatcctggaggagaagcgggcagtgc~~T~~ggacaggatgcagacacaact  
 acgagctggacgaggccgtgaccctgcagcggcag (SEQ ID NO:~~1-0-6~~2103) ;

DPB1\*7901 :

10 agaattacgttaccagt~~T~~acggcaggaatgtacgcgttaatgggacacagcgcttcctggagagatacatcta  
 caaccgggaggagttcg~~T~~gcgcttcgacagcgacgtggggagttccggcggtgacggagctggggcgccctgat  
 g~~A~~ggagtactggaacagccagaaggacatcctggaggagaagcgggcagtgcggacaggatgcagacacaact  
 acgagctggacgaggccgtgaccctgcagcggcag (SEQ ID NO:~~1-0-7~~2104) ;

DPB1\*8001 :

15 agaattaccccccagggacggcaggaatgtacgcgttaatgggacacagcgcttcctggagagatacatcta  
 caaccgggaggagttcgtgcgcttcgacagcgacgtggggagttccggcggtgacggagctggggcgccctgat  
 gaggat~~C~~actggaacagccagaaggacatcctggaggagaagcgggcagtgcggacaggatgtcagacacaact  
 acgagctggcgccccatgacc (SEQ ID NO:~~1-0-8~~2105) ;

DPB1\*8101 :

20 agaattaccccccagggacggcaggaatgtacgcgttaatgggacacagcgcttcctggagagatacatcta  
 caaccgggaggagttcgcgcgcttcgacagcgacgtggggagttccggcggtgacggagctggggcgccctgat  
 g~~A~~ggagtactggaacagccagaaggacatcctggaggag~~G~~agcggcagtgcggacaggat~~G~~tcagacacaact  
 acgagctgg~~G~~cgccccatgacc (SEQ ID NO:~~1-0-9~~2106) ;

DPB1\*8201 :

25 agaattaccccccagggacggcaggaatgtacgcgttaatgggacacagcgcttcctggagagatacatcta  
 caaccgggaggagttcgtgcgcttcgacagcgacgtggggagttccggcggtgacggagctggggcgccctgat  
 gaggagtactggaacagccagaaggacatcctggaggagaagcgggcagtgcggacaggatgtcagacacaact

acgagctggcgccccAtgaccctgcagcAccgag (SEQ ID NO:1-1-0-2107) ;

DPB1\*8301 :

agaattaccccccaggacggcaggaatgtacgcgttaatggcacacagcgcttcggagagatacatcta  
caaccggaggagttcgctcgacagcgtggggagttccggcggtgacggagctggggccctgat

5 gaggagtacttggaaacagccagaaggacTtcctggaggagaagcggcagtgcggacaggatgtcagacacaact

acgagctggcgccccatgaccctgcagcggcag (SEQ ID NO:1-1-1-2108) ;

DPB1\*8401 :

agaattaccccccaggacggcaggaatgtacgcgttaatggcacacagcgcttcggagagatacatcta  
caaccggaggagttcgctcgacagcgtggggagttccggcggtgacggagctggggccctgatG

10 gAggagtacttggaaacagccagaaggacatcctggaggagaagcggcagtgcggacaggatgtcagacacaact

acgagctggacgaggccgtgaccctgcagcggcga (SEQ ID NO:1-1-2-2109) ;

DPB1\*8501 :

agaattacgtgtaccagtTacggcaggaatgtacgcgttaatggcacacagcgcttcggagagatacatcta  
caaccggaggagttcgctcgacagcgtggggagttccggcggtgacggagctggggccctgct

15 gcggagttacttggaaacagccagaaggacatcctggaggagaagcggcagtgcggacaggatgtcagacacaact

acgagctggacgaggccgtgaccctgcagcAccgag (SEQ ID NO:1-1-3-2110) ;

DPB1\*8601 :

gaattacgtgcaccagtTacggcaggaatgtacgcgttaatggcacacagcgcttcggagagatacatctac  
aaccggaggagttcgctcgcttcgacagcgtggggagttccggcggtgacggagctggggccctgatg

20 aggaCtacttggaaacagccagaaggacatcctggaggagGagcggcagtgcggacaggatgtcagacacaacta

cgagctggcgccccAtgaccctgcagcggcga (SEQ ID NO:1-1-4-2111) ;

DPB1\*8701 :

agaattacgtgtaccagtTacggcaggaatgtacgcgttaatggcacacagcgcttcggagagatacatcta  
caaccggaggagttcgTgcgcttcgacagcgtggggagttccggcggtgacggagctggggccctgct

25 gcggagttacttggaaacagccagaaggacCtcctggaggagaagcggcagtgcggacaggatGtgcagacacaact

acgagctggacgaggccgtgaccctgcagcggcag (SEQ ID NO:1-1-5-2112) ;

DPB1\*8801 :

agaattacgttaccagtTacggcaggaatgtacgcgttaatgggacacagcgcttcctggagagatacatcta  
caaccggaggagttcgtgcgcgttcgacagcgacgtggggagttccggcggtgacggagctggggcgccctgat  
gaggaCtactggaacagccagaaggacatcctggaggagGagcggcagtgcggacaggatgcagacacaact  
acgagctggacgaggccgtgaccctgcagcggcag (SEQ ID NO:~~1-1-6-2113~~) ;

5 DPB1\*8901 :  
agaattacgttaccaggacggcaggaatgtacgcgttaatgggacacagcgcttcctggagagatacatcta  
caaccggaggagtcgcgcgttcgacagcgacgtggggagttccggcggtgacggagctggggcgccctgct  
gcggagtagtggaaacagccagaaggacatcctggaggagaagcggcagtgcggacaggatGtgcagacacaact  
acgagctggacgaggccgtgaccctgcagcggcag (SEQ ID NO:~~1-1-7-2114~~) ;

10 DPB1\*9001 :  
agaattacgttaccaggacggcaggaatgtacgcgttaatgggacacagcgcttcctggagagatacatcta  
caaccggaggagtTcgcgcggttcgacagcgacgtggggagttccggcggtgacggagctggggcgccctgct  
gcggagtagtggaaacagccagaaggacatcctggaggagaagcggcagtgcggacaggatGtgcagacacaact  
acgagctggacgaggccgtgaccctgcagcggcag (SEQ ID NO:~~1-1-8-2115~~) ;

15 DPB1\*9101 :  
agaattacgtgcaccagtacggcaggaatgtacgcgttaatgggacacagcgcttcctggagagatacatcta  
caaccggaggagttcgtgcgcgttcgacagcgacgtggggagttccggcggtgacggagctggggcgccctgat  
gaggaCtactggaacagccagaaggacCtcctggaggagaagcggcagtgcggacaggatGtgcagacacaact  
acgagctggacgaggccgtgaccctgcagcggcag (SEQ ID NO:~~1-1-9-2116~~) ;

20 DPB1\*9201 :  
agaattacgttaccagtTacggcaggaatgtacgcgttaatgggacacagcgcttcctggagagatacatcta  
caaccggaggagttcgtgcgcgttcgacagcgacgtggggagttccggcggtgacggagctggggcgccctgat  
gaggaCtactggaacagccagaaggacCtcctggaggagaagcggcagtgcggacaggatgcagacacaact  
acgagctggacgaggccgtgaccctgcagcggcag (SEQ ID NO:~~1-2-0-2117~~) ;

25 DPB1\*9301 :  
agaattacgttaccagtTacggcaggaatgtacgcgttaatgggacacagcgcttcctggagagatacatcta  
caaccggaggagttcgtgcgcgttcgacagcgacgtggggagttccggcggtgacggagctggggcgccctgat

gAggagtagtggAACAGCCAGAAGGACATCCTGGAGGAAGCAGCCTGCAGCGCCGAG (SEQ ID NO:1-2-1-2118) ;  
DPB1\*9601 :  
agaattaccccccaggacggcaggaatgtacgcgttaatggcacacagcgcttcgtggagagatacatcta  
5 caaccggaggagtacgcgcgttcgacagcgacgtggggagttccggcggtgacggagctggggcgcctgt  
gcggaggactggaacagccagaagCACATCCTGGAGGAGAACGGCAGTGCAGACAGGATGTGCAGACACAAC  
acgagctggcgccccatgaccctgcagcgccgag (SEQ ID NO:1-2-2-2119) ;

In the following, Probe lists DP1-DP4 are shown  
10 in Tables 13-1 to 13-3 and Tables 14-1 to 14-3  
respectively. Probe-Allele Lists DP1-4 are shown in  
Tables 15-1 to 15-5 and Tables 16-1 to 16-5.

Table 13-1

| <b>Probe No.</b> | <b>Base Sequence</b>                                         |
|------------------|--------------------------------------------------------------|
| 0                | acg cat aga cca aca ggG ( SEQ ID No: <u>1232120</u> )        |
| 1                | ag ttt atg ttt gaa ttt gat gaA ( SEQ ID No: <u>1242121</u> ) |
| 2                | t ctg gag gag ttt ggc cA ( SEQ ID No: <u>1252122</u> )       |
| 3                | g acg cat aga cca aca ggA ( SEQ ID No: <u>1262123</u> )      |
| 4                | g ttt atg ttt gaa ttt gat gaC ( SEQ ID No: <u>1272124</u> )  |
| 5                | cac act caa gcc gcc aaT ( SEQ ID No: <u>1282125</u> )        |
| 6                | tcc tat gtg gat ctg gat aaA ( SEQ ID No: <u>1292126</u> )    |
| 7                | ctg gag gag ttt ggc cAA ( SEQ ID No: <u>1302127</u> )        |
| 8                | ctg gag gag ttt ggc cG ( SEQ ID No: <u>1312128</u> )         |
| 9                | gcc gcg ttt gta cag acC ( SEQ ID No: <u>1322129</u> )        |
| 10               | t gaa ttt gat gaa gat gag cA ( SEQ ID No: <u>1332130</u> )   |
| 11               | ag ttc tat gtg gat ctg gaT ( SEQ ID No: <u>1342131</u> )     |
| 12               | g acc cat aga cca aca ggA ( SEQ ID No: <u>1352132</u> )      |
| 13               | t gcc atg ttt gta cag acC ( SEQ ID No: <u>1362133</u> )      |
| 14               | at gtg tca act tat gcc aT ( SEQ ID NO: <u>1372134</u> )      |
| 15               | ctg gct aac att gct ata tC ( SEQ ID No: <u>1382135</u> )     |
| 16               | cat gtg tca act tat gcc aT ( SEQ ID No: <u>1392136</u> )     |
| 17               | aac aac aac tta aat atc gct ( SEQ ID No: <u>1402137</u> )    |

Table 13-2

| <b>Probe No.</b> | <b>Base Sequence</b>                                      |
|------------------|-----------------------------------------------------------|
| 0                | gca gtg ccg gac agg G ( SEQ ID No: <u>1412138</u> )       |
| 1                | ca gtg ccg gac agg gtA ( SEQ ID No: <u>1422139</u> )      |
| 2                | tc gac agc gac gtg ggA ( SEQ ID No: <u>1432140</u> )      |
| 3                | c aac ccg gag gag ttc gT ( SEQ ID No: <u>1442141</u> )    |
| 4                | ctg ggg ccg cct gat gA ( SEQ ID No: <u>1452142</u> )      |
| 5                | g gac atc ctg gag gag G ( SEQ ID No: <u>1462143</u> )     |
| 6                | ca gtg ccg gac agg atG ( SEQ ID No: <u>1472144</u> )      |
| 7                | a cac aac tac gag ctg gG ( SEQ ID No: <u>1482145</u> )    |
| 8                | g ctg ggg ccg cct gaC ( SEQ ID No: <u>1492146</u> )       |
| 9                | ag gag gag ccg gca gtT ( SEQ ID No: <u>1502147</u> )      |
| 10               | ga tac atc tac aac ccg gaA ( SEQ ID No: <u>1512148</u> )  |
| 11               | c tac aac ccg gag gag ttT ( SEQ ID No: <u>1522149</u> )   |
| 12               | c tac aac ccg gag gag C ( SEQ ID No: <u>1532150</u> )     |
| 13               | g ctg ggg ccg cct gaG ( SEQ ID No: <u>1542151</u> )       |
| 14               | gag ctg ggc ggg ccc A ( SEQ ID No: <u>1552152</u> )       |
| 15               | ag aat tac gtg tac cag tT ( SEQ ID No: <u>1562153</u> )   |
| 16               | gg ccg cct gat gag gaC ( SEQ ID No: <u>1572154</u> )      |
| 17               | gg aac agc cag aag gac C ( SEQ ID No: <u>1582155</u> )    |
| 18               | ac gag gcc gtg acc ctA ( SEQ ID No: <u>1592156</u> )      |
| 19               | c tac aac ccg gag gag tT ( SEQ ID No: <u>1602157</u> )    |
| 20               | aac ccg gag gag ctc gT ( SEQ ID No: <u>1612158</u> )      |
| 21               | g gac ctc ctg gag gag G ( SEQ ID No: <u>1622159</u> )     |
| 22               | ag aat tac gtg cac cag tT ( SEQ ID No: <u>1632160</u> )   |
| 23               | aga tac atc tac aac ccg C ( SEQ ID No: <u>1642161</u> )   |
| 24               | g gag aga tac atc tac aac A ( SEQ ID No: <u>1652162</u> ) |
| 25               | g gca gtg ccg gac agg A ( SEQ ID No: <u>1662163</u> )     |
| 26               | gag ctg gtc ggg ccc A ( SEQ ID No: <u>1672164</u> )       |
| 27               | ga cac aac tac gag ctg gT ( SEQ ID No: <u>1682165</u> )   |
| 28               | cc gtg acc ctg cag cgT ( SEQ ID No: <u>1692166</u> )      |
| 29               | gg gca gtg ccg gac agA ( SEQ ID No: <u>1702167</u> )      |
| 30               | g gag gag aag ccg gca T ( SEQ ID No: <u>1712168</u> )     |

Table 13-3

| <b>Probe No.</b> | <b>Base Sequence</b>                                     |
|------------------|----------------------------------------------------------|
| 31               | ggg cgg cct gat gag gT ( SEQ ID No: <u>1722169</u> )     |
| 32               | ga cgg cag gaa tgc tac C ( SEQ ID No: <u>1732170</u> )   |
| 33               | gg aac agc cag aag gac T ( SEQ ID No: <u>1742171</u> )   |
| 34               | g gac ttc ctg gag gag G ( SEQ ID No: <u>1752172</u> )    |
| 35               | gg aac agc cag aag gac aA ( SEQ ID No: <u>1762173</u> )  |
| 36               | gc cag aag gac ctc ctg T ( SEQ ID No: <u>1772174</u> )   |
| 37               | gac ctc ctg gag gag aG ( SEQ ID No: <u>1782175</u> )     |
| 38               | aat tac ctt ttc cag gga cT ( SEQ ID No: <u>1792176</u> ) |
| 39               | gag aag cgg gca gtg cT ( SEQ ID No: <u>1802177</u> )     |
| 40               | ccc atg acc ctg cag cA ( SEQ ID No: <u>1812178</u> )     |
| 41               | tg ggg cgg cct gag gA ( SEQ ID No: <u>1822179</u> )      |
| 42               | gcc gtg acc ctg cag cA ( SEQ ID No: <u>1832180</u> )     |
| 43               | g aat tac gtg cac cag tT ( SEQ ID No: <u>1842181</u> )   |
| 44               | ac tgg aac agc cag aag C ( SEQ ID No: <u>1852182</u> )   |

Table 14-1

| <b>Probe No.</b> | <b>Base Sequence</b>                                      |
|------------------|-----------------------------------------------------------|
| 0                | a cca aca ggG gag ttt atg ( SEQ ID No: <u>1862183</u> )   |
| 1                | gaa ttt gat gaA gat gag atg ( SEQ ID No: <u>1872184</u> ) |
| 2                | ag ttt ggc cAa gcc ttt tc ( SEQ ID No: <u>1882185</u> )   |
| 3                | ga cca aca ggA gag ttt atg ( SEQ ID No: <u>1892186</u> )  |
| 4                | gaa ttt gat gaC gat gag atg ( SEQ ID No: <u>1902187</u> ) |
| 5                | at ctg gat aaA aag gag acc ( SEQ ID No: <u>1912188</u> )  |
| 6                | ttt ggc caa Acc ttt tcc tt ( SEQ ID No: <u>1922189</u> )  |
| 7                | ag ttt ggc cGa gcc ttt tc ( SEQ ID No: <u>1932190</u> )   |
| 8                | t gta cag acC cat aga cca ( SEQ ID No: <u>1942191</u> )   |
| 9                | gaa gat gag cAg ttc tat gt ( SEQ ID No: <u>1952192</u> )  |
| 10               | cg ttt gta caA acc cat aga ( SEQ ID No: <u>1962193</u> )  |
| 11               | g gat ctg gaT aag aag gag ( SEQ ID No: <u>1972194</u> )   |
| 12               | act tat gcc aTg ttt gta cag ( SEQ ID No: <u>1982195</u> ) |
| 13               | att gct ata tCg aac aac aac ( SEQ ID No: <u>1992196</u> ) |
| 14               | g aat atc gcT atc cag cgt ( SEQ ID No: <u>2002197</u> )   |

Table 14-2

| <b>Probe No.</b> | <b>Base Sequence</b>                                     |
|------------------|----------------------------------------------------------|
| 0                | tAc cag gga cgg cag ga ( SEQ ID No: <u>2012198</u> )     |
| 1                | ccg gac agg Gta tgc aga ( SEQ ID No: <u>2022199</u> )    |
| 2                | g gac agg gtA tgc aga ca ( SEQ ID No: <u>2032200</u> )   |
| 3                | gac gtg ggA gag ttc cg ( SEQ ID No: <u>2042201</u> )     |
| 4                | at tac ctt tTc cag gga cg ( SEQ ID No: <u>2052202</u> )  |
| 5                | g gag ttc gTg cgc ttc g ( SEQ ID No: <u>2062203</u> )    |
| 6                | gg cct gat gAg gag tac t ( SEQ ID No: <u>2072204</u> )   |
| 7                | g gag gag Gag cgg gca ( SEQ ID No: <u>2082205</u> )      |
| 8                | g gac agg atG tgc aga ca ( SEQ ID No: <u>2092206</u> )   |
| 9                | gag ctg gGc ggg ccc ( SEQ ID No: <u>2102207</u> )        |
| 10               | cgG cct gaC gag gag ta ( SEQ ID No: <u>2112208</u> )     |
| 11               | cgG gca gtT ccG gac ag ( SEQ ID No: <u>2122209</u> )     |
| 12               | c aac cgg gaA gag ttc gt ( SEQ ID No: <u>2132210</u> )   |
| 13               | g gag gag ttT gtg cgc tt ( SEQ ID No: <u>2142211</u> )   |
| 14               | g gag gag Ctc gtg cgc ( SEQ ID No: <u>2152212</u> )      |
| 15               | cgG cct gaG gcg gag t ( SEQ ID No: <u>2162213</u> )      |
| 16               | c ggg ccc Atg acc ctg ( SEQ ID No: <u>2172214</u> )      |
| 17               | tg tac cag tTa cgg cag g ( SEQ ID No: <u>2182215</u> )   |
| 18               | t gat gag gaC tac tgg aac ( SEQ ID No: <u>2192216</u> )  |
| 19               | cag aag gac Ctc ctg gag ( SEQ ID No: <u>2202217</u> )    |
| 20               | gtg acc ctA cag cgc cg ( SEQ ID No: <u>2212218</u> )     |
| 21               | g gag gag tTc gcg cgc ( SEQ ID No: <u>2222219</u> )      |
| 22               | g gag ctc gTg cgc ttc g ( SEQ ID No: <u>2232220</u> )    |
| 23               | aat tac gtg Cac cag tta cg ( SEQ ID No: <u>2242221</u> ) |
| 24               | tac aac cgg Cag gag tac ( SEQ ID No: <u>2252222</u> )    |
| 25               | atc tac aac Agg cag gag t ( SEQ ID No: <u>2262223</u> )  |
| 26               | ccg gac agg Ata tgc aga ( SEQ ID No: <u>2272224</u> )    |
| 27               | c gag ctg gTc ggg ccc ( SEQ ID No: <u>2282225</u> )      |
| 28               | g ccg gac agA gta tgc ag ( SEQ ID No: <u>2292226</u> )   |
| 29               | g cac cag tTa cgg cag g ( SEQ ID No: <u>2302227</u> )    |
| 30               | g cgg gca Ttg ccG gac ( SEQ ID No: <u>2312228</u> )      |

Table 14-3

| <b>Probe No.</b> | <b>Base Sequence</b>                                      |
|------------------|-----------------------------------------------------------|
| 31               | ct gat gag gTg tac tgg aa ( SEQ ID No: 232 <u>2229</u> )  |
| 32               | gaa tgc tac Ccg ttt aat gg ( SEQ ID No: 233 <u>2230</u> ) |
| 33               | cag aag gac Ttc ctg gag ( SEQ ID No: 234 <u>2231</u> )    |
| 34               | ag aag gac aAc ctg gag g ( SEQ ID No: 235 <u>2232</u> )   |
| 35               | gac ctc ctg Tag gag aag ( SEQ ID No: 236 <u>2233</u> )    |
| 36               | g gag gag aGg cgG gca ( SEQ ID No: 237 <u>2234</u> )      |
| 37               | g gac cag tTa cgG cag g ( SEQ ID No: 238 <u>2235</u> )    |
| 38               | tc cag gga cTg cag gaa t ( SEQ ID No: 239 <u>2236</u> )   |
| 39               | g gca gtG cTg gac agg g ( SEQ ID No: 240 <u>2237</u> )    |
| 40               | g ctG ggC gGg ccc atg ( SEQ ID No: 241 <u>2238</u> )      |
| 41               | cgG cct gaG gag gag ta ( SEQ ID No: 242 <u>2239</u> )     |
| 42               | gg cct gag gAg gag tac t ( SEQ ID No: 243 <u>2240</u> )   |
| 43               | agc cag aag Cac atc ctG ( SEQ ID No: 244 <u>2241</u> )    |

**Table 15-1**

| Allele Number | Probe Number for Detection |    |    |
|---------------|----------------------------|----|----|
| DPA1*010301   | 0                          | 1  | 2  |
| DPA1*010302   | 3                          |    |    |
| DPA1*0104     | 4                          |    |    |
| DPA1*0105     | 5                          |    |    |
| DPA1*0106     | 6                          |    |    |
| DPA1*0107     | 7                          |    |    |
| DPA1*0108     | 4                          | 8  |    |
| DPA1*020101   | 9                          | 6  | 5  |
| DPA1*020102   | 6                          | 5  |    |
| DPA1*020103   | 10                         | 5  |    |
| DPA1*020104   | 6                          | 5  |    |
| DPA1*020105   | 3                          | 10 | 5  |
| DPA1*020106   | 9                          | 11 | 5  |
| DPA1*020201   | 12                         | 11 | 5  |
| DPA1*020202   | 13                         | 12 | 10 |
| DPA1*020203   | 14                         | 5  |    |
| DPA1*0203     | 9                          | 5  |    |
| DPA1*0301     | 15                         |    |    |
| DPA1*0302     | 16                         |    |    |
| DPA1*0401     | 17                         |    |    |

**Table 15-2**

| Allele Number | Probe Number for Detection |    |    |    |   |
|---------------|----------------------------|----|----|----|---|
| DPB1*010101   | 0                          | 1  |    |    |   |
| DPB1*010102   | 2                          |    |    |    |   |
| DPB1*020102   | 3                          | 4  | 5  | 6  | 7 |
| DPB1*020103   | 8                          |    |    |    |   |
| DPB1*020104   | 9                          |    |    |    |   |
| DPB1*020105   | 10                         |    |    |    |   |
| DPB1*020106   | 11                         |    |    |    |   |
| DPB1*0202     | 12                         | 13 | 5  | 14 |   |
| DPB1*030101   | 15                         | 3  | 16 | 17 |   |
| DPB1*030102   | 18                         |    |    |    |   |
| DPB1*0401     | 19                         | 6  | 7  |    |   |
| DPB1*0402     | 3                          | 4  | 6  | 7  |   |
| DPB1*0501     | 12                         | 20 | 13 | 6  |   |
| DPB1*0601     | 16                         | 17 | 21 | 6  |   |
| DPB1*0801     | 3                          | 4  | 5  |    |   |
| DPB1*0901     | 22                         | 16 | 5  |    |   |
| DPB1*1001     | 22                         | 3  | 4  | 5  |   |
| DPB1*110101   | 23                         |    |    |    |   |
| DPB1*110102   | 24                         |    |    |    |   |
| DPB1*1301     | 15                         | 5  | 25 |    |   |
| DPB1*1401     | 22                         | 3  | 16 | 17 |   |
| DPB1*1501     | 23                         | 26 |    |    |   |
| DPB1*1601     | 3                          | 4  | 5  | 6  |   |
| DPB1*1701     | 22                         | 16 | 5  | 6  |   |
| DPB1*1801     | 3                          | 4  | 27 |    |   |
| DPB1*1901     | 13                         | 5  | 25 |    |   |
| DPB1*200101   | 16                         | 17 | 6  |    |   |
| DPB1*200102   | 28                         |    |    |    |   |
| DPB1*2101     | 15                         | 12 | 13 | 5  | 6 |
| DPB1*2201     | 12                         | 13 | 5  | 6  |   |

**Table 15-3**

| Allele Number | Probe Number for Detection |    |    |    |   |
|---------------|----------------------------|----|----|----|---|
| DPB1*2301     | 3                          | 6  | 7  |    |   |
| DPB1*2401     | 13                         | 14 |    |    |   |
| DPB1*2501     | 15                         | 3  | 4  | 17 |   |
| DPB1*260101   | 29                         |    |    |    |   |
| DPB1*2701     | 15                         | 6  |    |    |   |
| DPB1*2801     | 4                          | 17 | 27 |    |   |
| DPB1*2901     | 16                         | 17 | 21 |    |   |
| DPB1*3001     | 22                         | 13 | 5  | 6  |   |
| DPB1*3101     | 30                         |    |    |    |   |
| DPB1*3201     | 31                         |    |    |    |   |
| DPB1*3301     | 5                          | 6  | 7  |    |   |
| DPB1*3401     | 30                         | 26 |    |    |   |
| DPB1*3501     | 22                         | 3  | 16 |    |   |
| DPB1*3601     | 15                         | 12 | 20 | 13 | 6 |
| DPB1*3701     | 3                          | 4  | 5  |    |   |
| DPB1*3801     | 32                         |    |    |    |   |
| DPB1*3901     | 6                          | 7  |    |    |   |
| DPB1*4001     | 27                         |    |    |    |   |
| DPB1*4101     | 33                         | 34 |    |    |   |
| DPB1*4401     | 12                         | 17 | 21 |    |   |
| DPB1*4501     | 3                          | 4  | 17 |    |   |
| DPB1*4601     | 16                         | 5  | 14 |    |   |
| DPB1*4701     | 13                         | 5  | 14 |    |   |
| DPB1*4801     | 12                         | 4  | 7  | 14 |   |
| DPB1*4901     | 4                          | 6  | 7  |    |   |
| DPB1*5001     | 3                          | 16 | 17 |    |   |
| DPB1*5101     | 19                         | 4  | 6  | 7  |   |
| DPB1*5201     | 15                         | 3  | 17 |    |   |
| DPB1*5301     | 4                          | 27 |    |    |   |
| DPB1*5401     | 22                         | 13 | 5  |    |   |

**Table 15-4**

| Allele Number | Probe Number for Detection |    |    |   |
|---------------|----------------------------|----|----|---|
| DPB1*5501     | 22                         | 3  | 5  | 6 |
| DPB1*5601     | 19                         | 17 |    |   |
| DPB1*5701     | 3                          | 16 | 17 |   |
| DPB1*5801     | 12                         | 5  | 6  |   |
| DPB1*5901     | 4                          | 17 | 6  | 7 |
| DPB1*6001     | 35                         |    |    |   |
| DPB1*6101N    | 36                         |    |    |   |
| DPB1*6201     | 12                         | 20 | 27 |   |
| DPB1*6301     | 12                         | 6  |    |   |
| DPB1*6401N    | 16                         | 17 | 21 | 6 |
| DPB1*6601     | 22                         | 19 | 6  | 7 |
| DPB1*6701     | 22                         | 3  | 17 |   |
| DPB1*6801     | 3                          | 4  |    |   |
| DPB1*6901     | 16                         | 37 |    |   |
| DPB1*7001     | 3                          | 16 | 17 |   |
| DPB1*7101     | 3                          | 5  | 6  | 7 |
| DPB1*7201     | 17                         | 6  | 7  |   |
| DPB1*7301     | 4                          | 17 | 7  |   |
| DPB1*7401     | 23                         | 26 |    |   |
| DPB1*7501     | 3                          | 4  | 7  |   |
| DPB1*7601     | 22                         | 16 | 17 |   |
| DPB1*7701     | 38                         |    |    |   |
| DPB1*7801     | 39                         |    |    |   |
| DPB1*7901     | 15                         | 3  | 4  |   |
| DPB1*8001     | 16                         | 14 |    |   |
| DPB1*8101     | 4                          | 5  | 6  | 7 |
| DPB1*8201     | 14                         | 40 |    |   |
| DPB1*8301     | 33                         |    |    |   |
| DPB1*8401     | 13                         | 41 |    |   |
| DPB1*8501     | 15                         | 42 |    |   |

**Table 15-5**

| Allele Number | Probe Number for Detection |    |    |    |
|---------------|----------------------------|----|----|----|
| DPB1*8601     | 43                         | 16 | 5  | 14 |
| DPB1*8701     | 15                         | 3  | 17 | 6  |
| DPB1*8801     | 15                         | 16 | 5  |    |
| DPB1*8901     | 6                          |    |    |    |
| DPB1*9001     | 19                         |    |    |    |
| DPB1*9101     | 16                         | 17 | 6  |    |
| DPB1*9201     | 15                         | 16 | 17 |    |
| DPB1*9301     | 15                         | 3  | 4  | 5  |
| DPB1*9601     | 44                         |    |    | 6  |

**Table 16-1**

| Allele Number | Probe Number for Detection |    |   |
|---------------|----------------------------|----|---|
| DPA1*010301   | 0                          | 1  | 2 |
| DPA1*010302   | 3                          |    |   |
| DPA1*0104     | 4                          |    |   |
| DPA1*0106     | 5                          |    |   |
| DPA1*0107     | 6                          |    |   |
| DPA1*0108     | 4                          | 7  |   |
| DPA1*020101   | 8                          | 5  | 7 |
| DPA1*020102   | 5                          | 7  |   |
| DPA1*020103   | 9                          | 7  |   |
| DPA1*020104   | 10                         |    |   |
| DPA1*020105   | 3                          | 9  | 7 |
| DPA1*020106   | 8                          | 11 | 7 |
| DPA1*020201   | 3                          | 11 | 7 |
| DPA1*020202   | 8                          | 3  | 9 |
| DPA1*020203   | 12                         | 7  |   |
| DPA1*0203     | 8                          | 7  |   |
| DPA1*0301     | 13                         |    |   |
| DPA1*0302     | 12                         |    |   |
| DPA1*0401     | 14                         |    |   |

**Table 16-2**

| Allele Number | Probe Number for Detection |    |    |    |   |   |
|---------------|----------------------------|----|----|----|---|---|
| DPB1*010101   | 0                          | 1  | 2  |    |   |   |
| DPB1*010102   | 3                          |    |    |    |   |   |
| DPB1*020102   | 4                          | 5  | 6  | 7  | 8 | 9 |
| DPB1*020103   | 10                         |    |    |    |   |   |
| DPB1*020104   | 11                         |    |    |    |   |   |
| DPB1*020105   | 12                         |    |    |    |   |   |
| DPB1*020106   | 13                         |    |    |    |   |   |
| DPB1*0202     | 14                         | 15 | 7  | 16 |   |   |
| DPB1*030101   | 17                         | 5  | 18 | 19 |   |   |
| DPB1*030102   | 20                         |    |    |    |   |   |
| DPB1*0401     | 4                          | 21 | 8  | 9  |   |   |
| DPB1*0402     | 4                          | 5  | 6  | 8  | 9 |   |
| DPB1*0501     | 4                          | 14 | 22 | 15 | 8 |   |
| DPB1*0601     | 18                         | 19 | 7  | 8  |   |   |
| DPB1*0801     | 5                          | 6  | 7  |    |   |   |
| DPB1*0901     | 23                         | 18 | 7  |    |   |   |
| DPB1*1001     | 23                         | 6  | 7  |    |   |   |
| DPB1*110101   | 17                         | 24 |    |    |   |   |
| DPB1*110102   | 25                         |    |    |    |   |   |
| DPB1*1301     | 17                         | 7  | 26 |    |   |   |
| DPB1*1401     | 23                         | 5  | 18 | 19 |   |   |
| DPB1*1501     | 24                         | 16 |    |    |   |   |
| DPB1*1601     | 4                          | 5  | 6  | 7  | 8 |   |
| DPB1*1701     | 23                         | 18 | 7  | 8  |   |   |
| DPB1*1801     | 5                          | 6  | 27 |    |   |   |
| DPB1*1901     | 4                          | 15 | 7  | 26 |   |   |
| DPB1*200101   | 18                         | 19 | 8  |    |   |   |
| DPB1*200102   | 18                         | 19 | 8  |    |   |   |

**Table 16-3**

| Allele Number | Probe Number for Detection |    |    |    |   |
|---------------|----------------------------|----|----|----|---|
| DPB1*2101     | 17                         | 14 | 15 | 7  | 8 |
| DPB1*2201     | 4                          | 14 | 15 | 7  | 8 |
| DPB1*2301     | 4                          | 5  | 8  | 9  |   |
| DPB1*2401     | 15                         | 16 |    |    |   |
| DPB1*2501     | 17                         | 5  | 6  | 19 |   |
| DPB1*260101   | 28                         |    |    |    |   |
| DPB1*260102   | 17                         |    |    |    |   |
| DPB1*2701     | 17                         | 8  |    |    |   |
| DPB1*2801     | 6                          | 19 | 27 |    |   |
| DPB1*2901     | 18                         | 19 | 7  |    |   |
| DPB1*3001     | 23                         | 29 | 15 | 7  | 8 |
| DPB1*3101     | 30                         |    |    |    |   |
| DPB1*3201     | 31                         |    |    |    |   |
| DPB1*3301     | 4                          | 7  | 8  | 9  |   |
| DPB1*3401     | 30                         | 16 |    |    |   |
| DPB1*3501     | 23                         | 5  | 18 |    |   |
| DPB1*3601     | 17                         | 14 | 22 | 15 | 8 |
| DPB1*3701     | 17                         | 5  | 6  | 7  |   |
| DPB1*3801     | 32                         |    |    |    |   |
| DPB1*3901     | 4                          | 8  | 9  |    |   |
| DPB1*4001     | 4                          | 27 |    |    |   |
| DPB1*4101     | 33                         | 7  |    |    |   |
| DPB1*4401     | 14                         | 19 | 7  |    |   |
| DPB1*4501     | 29                         | 5  | 6  | 19 |   |
| DPB1*4601     | 4                          | 18 | 7  | 16 |   |
| DPB1*4701     | 15                         | 7  | 16 |    |   |
| DPB1*4801     | 14                         | 6  | 9  | 16 |   |
| DPB1*4901     | 6                          | 8  | 9  |    |   |
| DPB1*5001     | 5                          | 18 | 19 |    |   |
| DPB1*5101     | 4                          | 21 | 6  | 8  | 9 |

**Table 16-4**

| Allele Number | Probe Number for Detection |    |    |    |
|---------------|----------------------------|----|----|----|
| DPB1*5201     | 17                         | 5  | 19 |    |
| DPB1*5301     | 4                          | 6  | 27 |    |
| DPB1*5401     | 23                         | 29 | 15 | 7  |
| DPB1*5501     | 23                         | 7  | 8  |    |
| DPB1*5601     | 17                         | 21 | 19 |    |
| DPB1*5701     | 5                          | 18 | 19 |    |
| DPB1*5801     | 29                         | 14 | 7  | 8  |
| DPB1*5901     | 6                          | 19 | 8  | 9  |
| DPB1*6001     | 34                         |    |    |    |
| DPB1*6101N    | 35                         |    |    |    |
| DPB1*6201     | 14                         | 22 | 27 |    |
| DPB1*6301     | 14                         | 8  |    |    |
| DPB1*6401N    | 18                         | 19 | 7  | 8  |
| DPB1*6501     | 4                          |    |    |    |
| DPB1*6601     | 23                         | 16 |    |    |
| DPB1*6701     | 23                         | 5  | 19 |    |
| DPB1*6801     | 4                          | 5  | 6  |    |
| DPB1*6901     | 18                         | 36 |    |    |
| DPB1*7001     | 37                         | 5  | 18 | 19 |
| DPB1*7101     | 5                          | 7  | 8  | 9  |
| DPB1*7201     | 19                         | 8  | 9  |    |
| DPB1*7301     | 6                          | 19 | 9  |    |
| DPB1*7401     | 17                         | 24 | 16 |    |
| DPB1*7501     | 5                          | 6  | 9  |    |
| DPB1*7601     | 23                         | 18 | 19 |    |
| DPB1*7701     | 38                         |    |    |    |
| DPB1*7801     | 39                         |    |    |    |
| DPB1*7901     | 17                         | 5  | 6  |    |
| DPB1*8001     | 4                          | 18 | 40 |    |
| DPB1*8101     | 4                          | 6  | 7  | 8  |
|               |                            |    |    | 9  |

**Table 16-5**

| Allele Number | Probe Number for Detection |    |    |   |   |
|---------------|----------------------------|----|----|---|---|
|               | 4                          | 5  | 6  | 8 | 9 |
| DPB1*8201     | 4                          | 5  | 6  | 8 | 9 |
| DPB1*8301     | 33                         |    |    |   |   |
| DPB1*8401     | 41                         | 42 |    |   |   |
| DPB1*8501     | 17                         | 8  |    |   |   |
| DPB1*8601     | 23                         | 7  | 16 |   |   |
| DPB1*8701     | 17                         | 5  | 19 | 8 |   |
| DPB1*8801     | 17                         | 18 | 7  |   |   |
| DPB1*8901     | 8                          |    |    |   |   |
| DPB1*9001     | 21                         |    |    |   |   |
| DPB1*9101     | 23                         | 19 | 8  |   |   |
| DPB1*9201     | 17                         | 18 | 19 |   |   |
| DPB1*9301     | 17                         | 5  | 6  | 7 | 8 |
| DPB1*9601     | 43                         |    |    |   |   |

(Example 9)

Probes for identification of HLA-DQ allele

Extraction of DNA from 1 ml of human blood was performed using GFX Genomic Blood DNA Purification 5 Kit from Amersham Biosciences in the same manner as in Example 1.

Next, quantitative PCR was carried out in the same manner as in Example 1 except that probes in the probe lists DQ1A and DQ1B were used and 2  $\mu$ l of the 10 mixed primers consisting of 1  $\mu$ l each of respective solutions of the following primers (10 pmol/ $\mu$ l) and 6  $\mu$ l of ultra pure water were used:

GGTGAGGTAACGTGATCTTG (SEQ ID NO: 1652413)

TCCTTCTGGCTGTTCCAGTACTC (SEQ ID NO: 1662414).

15 After PCR amplification, referring to Amp Plot and Dissociation curves on a display of 5700 software, and to the allele-probe list (Table 19A, 19B-1 and 19B-2), it was identified as DQA1\*0103 and DQB1\*060101.

20 (Example 10)

Extraction of DNA from 1 ml of human blood was performed in the same way as in Example 3. PCR of human HLA-DQ was then performed in the same manner as in Example 2 except that 3  $\mu$ l of the mixed primer 25 consisting of 1  $\mu$ l each of the solutions containing the following sequences at 10 pmol/ $\mu$ l respectively, and 12  $\mu$ l of ultra pure water were used:

GGTGAGGTAAC TGATCTTG (SEQ ID NO: 1652413)

ATGATCCTAACAAAGCTCTG (SEQ ID NO: 1672415)

TGTGCTACTTCACCAACGGGACG (SEQ ID NO: 1682416).

At the same time, a DNA microarray was prepared  
5 to identify the allele in the specimen described  
above in the same manner as in Example 2, except that  
probes in the probe list of Tables 18A, 18B-1 and  
18B-2 were used to form the probe spots respectively.

Then, hybridization was performed using the  
10 above specimen and the prepared DNA microarray in the  
same manner as in Example 2. Fluorometry measurement  
was conducted with GenePix4000B (Axon). Referring to  
the allele-probe list (Tables 20A, 20B-1 and 20B-2),  
it was identified as DQA1\*0103 and DQB1\*060101.

15

Allele list

DQA1\*010101

atgatcctaaacaaagctctgctgctggggccctcgctctgaccaccgtatgagccccctgtggaggtaagaca  
tttgtggctgaccacgttgcctcttggttaacttgttaccagtttacggccctctggccagatacccatga  
20 atttgatggagatgagGagttctacgtggacctggagagggactgcctggcgtggcctgagttcagcaaa  
tttggaggtttgcacctcagggtgcactgagaaacatggctgtggcaaaaacacaacttgaacatcatgattaaac  
gctacaactctaccgctgtaccaatgaggttctgaggtcacagtgtttcaagtcctccgtgacactggc  
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tcagtcacagaagggtttctgagaccagctccctccaaagagtgtatcatttcaagatcagttaccta  
25 ctttcccttctgctgtatgagattatgactgcaagggtggcactgggcctggaccagccttctgaaaca  
ctgggagcctgagattccagccctatgtcagagctcacagagactgtggctgcgcctgggtgtctgtggc  
ctcgtggcattgtggggactgtctcatcatccaaggcctgcgttcagttggtgcttccagacaccaaggc

cattgtga (SEQ ID NO:1692417)

DQA1\*010102

atgatcctaaacaaagctctgctggggccctcgctctgaccaccgtatgagcccgtggaggtgaagaca  
tttgtggctgaccacgttgcccttggtaaaacttgtaccagtttacggccctggccagcacccatga  
5 atttgatggagatgaggagttctacgtggacctggagagagaaggactgcctggcgtggcctgagttcagcaaa  
tttgagggtttgacccgcagggtgcactgagaaacatggctgtggcaaaacacaacttgaacatcatgattaac  
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tcagtcacagaagggtttctgagaccagctccctccaaagactgtatccatttcaagatcagttaccc  
10 ccttcctccctctgatgagatttatgactgcaagggtggactggccctggaccagcctttgaaaca  
ctgggagccctgagattccagccctatgtcagactcacagagactgtggctgcgcctgggttgc  
ctcggtggcattgtggcactgtcttcatcatccaaaggccctgcgttcagttggccttccagacaccaGggc  
cattgtga (SEQ ID NO:1702418)

DQA1\*010201

15 atgatcctaaacaaagctctgctggggccctcgctctgaccaccgtatgagcccgtggaggtgaagaca  
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25 cattgtga (SEQ ID NO:1712419)

DQA1\*010202

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 10 cattgtga (SEQ ID NO:1722420)  
 DQA1\*0103  
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 ttgtggctgaccatgtgccttgtggtaaacttgtaccagtttacggccctctggccagttcacccatga  
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DQA1\*010402

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 ctggg (SEQ ID NO:1752423)

DQA1\*0105

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5 DQA1\*0302

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DQA1\*0303

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DQA1\*040101

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DQA1\*040102

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SEQ ID NO:1832431)

DQA1\*050101

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DQA1\*0502  
  
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DQA1\*0503  
  
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**DQA1\*0504**

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 actctaccgctgctaccaatg (SEQ ID NO:1882436)

**DQA1\*0505**

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10 Q ID NO:1992447

DQB1\*0202

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NO:2012449)

DQB1\*030101

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10 DQB1\*030102

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DQB1\*0306

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DQB1\*0307

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DQB1\*0309

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DQB1\*0310

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DQB1\*0312

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DQB1\*0313

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## DQB1\*0401

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**Q ID NO:2182466**

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**Q ID NO:2192467**

## DQB1\*060101

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**Q ID NO:2202468**

## DQB1\*060102

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## DQB1\*0602

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 Q ID NO:2232471)

## DQB1\*0603

gggcatgtgctacttcaccaacgggacggagcgcgtgcgtttgtAaccagacacatctataaccgagaggagta  
 25 ggcgcgttcgacagcgacgtgggggtgtaccgcgcggtgacgcccgcagggcggcctgatgccgtactggaaca  
 gccagaaggaaagtccctggagggacccggggagttggacacgggtgtcagacacaactacgagggtggcgttccg  
 cgggatcTtgcagaggagagtggagcccacagtgaccatctcccatccaggacagaggccctaaccaccacaac

ctgctggtctcggtgacagatttatccaggccagatcaaagtccggtggttcggaatgatcaggaggaga  
 cagccggcggttgtccaccccccatttaggaatggtgactggacTttccagatcctggatgctggaaatgac  
 tccccagcgtggagatgtctacacctgccacgtggagcacccagcctccagagccccatcaccgtggagtgg (SEQ  
Q ID NO:2242472)

5 DQB1\*060401  
 gggcatgtgctacttaccaacggacggagcgcgtgcgtttaaccagacacatctataaccgagaggagttac  
 gcgcgcgttcgacagcgacgtgggtgtaccggcggtgacgcccgcaggggcgccctttgcccggatctggaaaca  
 gccagaaggaagtccctggagAggaccggggggagttggacacgggtgtgcagacacaactacgagggtgggtacc  
 cgggatcctgcagaggagatggagccacagtgaccatctcccatccaggacagaggccctcaaccaccacaac  
 10 ctgctggtctcggtgacagatttatccaggccagatcaaagtccAgtgggttcggaatgatcaggaggaga  
 cagccggcggttgtccaccccccatttaggaatggtgactggactttccagatcctggatgctggaaatgac  
 tccccagcgtggagatgtctacacctgccacgtggagcacccagcctccagagccccatcaccgtggagtgg (SEQ  
Q ID NO:2252473)

DQB1\*060402  
 15 gggcatgtgctacttaccaacggacggagcgcgtgcgtttaaccagacacatctataaccgagaggagttac  
 gcgcgcgttcgacagcgacgtgggtgtaccgCgcgtgacgcccgcaggggcgccctttgcccggatctggaaaca  
 gccagaaggaagtccctggagAggAcccggggggagttggacacgggtgtgcagacacaactacgagggtggGgtacc  
 cgggatcctgcagaggagatggagccacagtgaccatctcccatccaggacagaggcc (SEQ ID  
NO:2262474)

20 DQB1\*060501  
 gggcctgtgctacttaccaacggacggagcgcgtgcgtttaaccagaTacatctataaccgagaggagttac  
 gcgcgcgttcgacagcgacgtgggtgtaccggcggtgacgcccgcaggggcgccctttgcccggatctggaaaca  
 gccagaaggaagtccctggagAggAcccggggggagttggacacgggtgtgcagacacaactacgagggtggGgtacc  
 cgggatcctgcagaggagatggagccacagtgaccatctcccatccaggacagaggcc (SEQ ID  
NO:2272475)

DQB1\*060502  
 ggacggagcgcgtgcgtttaaccagatacatctataaccgagaggagttacgcgcgcgttcgacagcgacgtggg

ggtgtaccggcggtgacgccgcagggcggctgtGCCagtaactggAACAGGAAAGTCCTGGAGAgg  
 AcccggcggtggacaCg (SEQ ID NO:2282476)  
 DQB1\*0606  
 ggacggagcgcgtgcgtttgtAaccagaTacatctataaccgagaggagtacgcgcgttcgacacgcacgtgg  
 5 ggtgtaccggcggtgacgccgcagggcggctgttgcggactactggAACAGGAAAGTCCTGGAGAgg  
 Acccggcggtggacagggtg (SEQ ID NO:2292477)  
 DQB1\*0607  
 gggcatgtgctacttcaccaacgggacggagcgcgtgcgtttgtAaccagacacatctataaccgagaggagtac  
 gcgcgcgttcgacagcgacgtgggggtgtaccgcgcgtgacgcgcgcagggcggctgtggactactggAACAGGAA  
 10 gccagaaggaagtccctggagAggAcccggcggtggacacgggtgtcagacacaactacgaggtggGtaccgc  
 cgggatcc (SEQ ID NO:2302478)  
 DQB1\*0608  
 gggcatgtgctacttcaccaacgggacggagcgcgtgcgtttgtAaccagacacatctataaccgagaggagtac  
 gcgcgcgttcgacagcgacgtgggggtgtaccgcgcgtgacgcgcgcagggcggctgttgcggactactggAACAGGAA  
 15 gccagaaggaagtccctggagggaccggggcggagttggacacgggtgtcagacacaactacgaggtggcgttcgc  
 cgggatcc (SEQ ID NO:2312479)  
 DQB1\*0609  
 gggcatgtgctacttcaccaacgggacggagcgcgtgcgtttgttaaccagaTacatctataaccgagaggagtac  
 gcgcgcgttcgacagcgacgtgggggtgtaccggcgcgtgacgcgcgcagggcggctgttgcggactactggAACAGGAA  
 20 gccagaaggaagtccctggagggaccggggcggagttggacacgggtgtcagacacaactacgaggtgggtaccgc  
 cgggatccctgcagaggagagtggagccccacagtgaccatctccccatccaggacagaggccctcaaccaccacaac  
 ctgcgttgtctcggtgacagatttatccaggccagatcaaagtccAgtggttcggaatgatcaggaggaga  
 cagccggcgttgtccaccccccatttaggaatggtgactggactttccagatccgtgtatgtggaaatgac  
 tccccacgcgtggagatgtcacacctgccacgtggagcacccagcctccagagccccatcaccgtggagtgg (SE  
 25 Q ID NO:2322480)  
 DQB1\*0610  
 gggcatgtgctacttcaccaacgggacggagcgcgtgcgtttgtgaccagatacatctataaccgagaggagtac

gcgcgcttcgacagcgtgggggtgtaccgcgcggtgacgccgcaggggcggccctaGcgccgagtactggaaca  
 gccagaaggaagtccctggagggacccggggcggagttggacacggtgtgcagacacaactacgagggtggcggttccg  
 cgggatcTtgcagagggagag (SEQ ID NO:2332481)

DQB1\*061101

5 gggcatgtgctacttcaccaacgggacggagcgcgtgcgttgcaccagaTacatctataaccgagaggagtagac  
 gcgcgcttcgacagcgtgggggtgtaccgcgggtgacgccgcaggggcggccctgAtgccgagtactggaaca  
 gccagaaggaagtccctggagggacccggggcggagttggacacggtgtgcagacacaactacgagggtggcggttccg  
 cgggatcTtgcagagg (SEQ ID NO:2342482)

DQB1\*061102

10 gggcatgtgctacttcaccaacgggacggagcgcgtgcgttgcaccagaTaccagaTacatctataaccgagaggagtagac  
 gcgcgcttcgacagcgtgggggtgtaccgcgggtgacgccgcaggggcggccctgAtgccgagtactggaaca  
 gccagaaggaagtccctggagggacccggggcggagttggacacggtgtgcagacacaactacgagggtggcggttccg  
 cgggatcTtgcagagggagag (SEQ ID NO:2352483)

DQB1\*0612

15 gggcatgtgctacttcaccaacgggacggagcgcgtgcgttgcaccagaTacatctataaccgagaggagtagac  
 gcgcgcttcgacagcgtgggggtgtaccggcggtgacgccgcaggggcggccctgttgcgcgtactggaaca  
 gccagaaggaagtccctggagggacccggggcggagttggacacggtgtgcagacacaactacgagggtgggttaccg  
 cgggatcctgcagaggagagtggagccccacagtgaccatctcccatccaggacagaggccctcaaccaccacaac  
 ctgctggctgctcggtgacagattctatccaggccagatcaaagtccAgtggttcggaatgatcaggaggaga  
 20 cagccggcgttgcgtccaccccccattttaggaatggtactggactttccagatccctggatgtggaaatgac  
 tccccagcgtggagatgtctacacctgccacgtggagcacccagcctccagagccccatcaccgtggagtgg (SEQ  
 Q ID NO:2362484)

DQB1\*0613

25 gggcatgtgctacttcaccaacgggacggagcgcgtgcgttgcaccagaTacatctataaccgagaggagtagac  
 gcgcgcttcgacagcgtgggggtgtaccgcgggtgacgccgcaggggcggccctgttgcgcgtactggaaca  
 gccagaaggaagtccctggagggacccggggcggagttggacacggtgtgcagacacaactacgagggtggcgtTccg  
 cgggat (SEQ ID NO:2372485)

## DQB1\*0614

gggcatgtctacttcaccaacgggacggagcgcgtcgctttgtAaccagacacatctataaccgagaggagtagac  
 gcgcgcttcgacagcgacgtgggggtgtaccgCgcgtgacgccgcagggcggcctgAtgccgagtactggaaca  
 gccagaaggaagtccctggagggacccgggagttggacacgggtgtcagacacaactacgaggtggcgttccg  
 5 cgggatcTtgcatggag (SEQ ID NO:2382486)

## DQB1\*0615

gggcatgtctacttcaccaacgggacggagcgcgtcgctttgtgaccagaTacatctataaccgagaggagtagac  
 gcgcgcttcgacagcgacgtgggggtgtaccgcgcggtacgcgcagggcggcctgAtgccgagtactggaaca  
 gccagaaggaagtccctggagAggAcccggggagttggacacgggtgtcagacacaactacgaggtggGgtaccg  
 10 cgggatcctgcagaggag (SEQ ID NO:2392487)

## DQB1\*0616

gggcatgtctacttcaccaacgggacggagcgcgtcgctttgtgaccagatacatctataaccgagaggagtagac  
 gcgcgcttcgacagcgacgtgggggtgtaccgcgcggtacgcgcagggcggcctgatgccgagAactggaaca  
 gccagaaggaagtccctggagggacccgggagttggacacgggtgtcagacacaactacgaggtggcgttccg  
 15 cgggatcttgcagaggag (SEQ ID NO:2402488)

## DQB1\*0617

gggcatgtctacttcaccaacgggacggagcgcgtcgctttgtAaccagacacatctataaccgagaggagtagac  
 gcgcgcttcgacagcgacgtgggggtgtaccggcggtacgcgcagggcggcctgttgccgagtactggaaca  
 gccagaaggaagtccctggagggccccgggagttggacacgggtgtcagacacaactacgaggtggGgtaccg  
 20 c (SEQ ID NO:2412489)

## DQB1\*0618

gggcatgtctacttcaccaacgggacggagcgcgtcgctttgtAaccagatacatctataaccgagaggagtagac  
 gcgcgcttcgacagcgacgtgggggtgtaccggcggtacgcgcagggcggcctgttgccgagtactggaaca  
 gccagaaggaagtccctggagAggaccggggagttggacacgggtgtcagacacaactacgaggtggcgttccg  
 25 cgggatcTtgcatggag (SEQ ID NO:2422490)

## DQB1\*0619

gggcatgtctacttcaccaacgggacggagcgcgtcgctTtgtgaccagatacatctataaccgagaggagtagac

gcgcgcttcgacagcgtgggggtgtatcgccgggtacgcgcgcTggggcggcctgAtgccgagtactggaaca  
gccagaaggaagtccctggagggaccggggcggagTtggacacgggtgtgcagacacaactacgagggtggcggtccg  
cgggatcTtgcagagggagag (SEQ ID NO:2432491)

DQB1\*0620

5 gggcctgtgctacttcaccaacgggacggagcgcgtcgcttgcaccagaTacatctataaccgagaggagttac  
gcgcgcgttcgacagcgtgggggtgtaccgcgcgggtacgcgcgcaggggcggcctgAtgccgagtactggaaca  
gccagaaggaagtccctggagggaccggggcggagttggacacgggtgtgcagacacaactacgagggtggcggtccg  
c (SEQ ID NO:2442492)

10 In the following, Probe Lists DQ1 and DQ2 are shown in Tables 17A, 17B-1 and 17B-2 and tables 18A, 18B-1 and 18B-2 respectively. Tables 19A, 19B-1 and 19B-2 and Tables 20A, 20B-1 and 20B-2 show Allele-Probe Lists.

15

Table 17A

| <b>Probe No.</b> | <b>Base Sequence</b>                                         |
|------------------|--------------------------------------------------------------|
| 0                | t gaa ttt gat gga gat gag G<br>( SEQ ID No: <u>±2249</u> )   |
| 1                | ggt gct tcc aga cac caG<br>( SEQ ID No: <u>±2250</u> )       |
| 2                | gg ttg tct gtg ggc ctc A<br>( SEQ ID No: <u>±2251</u> )      |
| 3                | cag ccc aac acc ctc atC<br>( SEQ ID No: <u>±2252</u> )       |
| 4                | g ctg agc aat ggg cac G<br>( SEQ ID No: <u>±2253</u> )       |
| 5                | ca gag act gtg gtc tgc A<br>( SEQ ID No: <u>±2254</u> )      |
| 6                | c cct tgt gga ggt gaa gG<br>( SEQ ID No: <u>±2255</u> )      |
| 7                | cct gtg gtc aac atc acC<br>( SEQ ID No: <u>±2256</u> )       |
| 8                | ccc tgt gga ggt gaa gG<br>( SEQ ID No: <u>±2257</u> )        |
| 9                | c ctg gag agg aag gag G<br>( SEQ ID No: <u>±2258</u> )       |
| 10               | tg cct ctg ttc cac aga C<br>( SEQ ID No: <u>±2259</u> )      |
| 11               | x ag cct gag att cca A<br>( SEQ ID No: <u>±2260</u> )        |
| 12               | gcc ctg acc acc gtg aC<br>( SEQ ID No: <u>±2261</u> )        |
| 13               | c acc ttc ctc cct tct gA<br>( SEQ ID No: <u>±2262</u> )      |
| 14               | tt aaa cgc tcc aac tct acT<br>( SEQ ID No: <u>±2263</u> )    |
| 15               | cc aga cac caa ggg ccC<br>( SEQ ID No: <u>±2264</u> )        |
| 16               | ca gtg ttt tcc aag tct ccT<br>( SEQ ID No: <u>±2265</u> )    |
| 17               | g cac tgg ggc ctg gac A<br>( SEQ ID No: <u>±2266</u> )       |
| 18               | g gtc tgc gcc ctg ggA<br>( SEQ ID No: <u>±2267</u> )         |
| 19               | ct gac cac gtt gcc tct tA<br>( SEQ ID No: <u>±2268</u> )     |
| 20               | c cta aaa cat aac ttg aac agT<br>( SEQ ID No: <u>±2269</u> ) |
| 21               | c aga caa ttt aga ttt gac cG<br>( SEQ ID No: <u>±2270</u> )  |
| 22               | tc acc ctc ctc cct tct T<br>( SEQ ID No: <u>±2271</u> )      |
| 23               | tg tac cag tct tac ggt cT<br>( SEQ ID No: <u>±2272</u> )     |
| 24               | ag gtg gag cac tgg ggA<br>( SEQ ID No: <u>±2273</u> )        |
| 25               | ggt ccc tct ggc cag tT<br>( SEQ ID No: <u>±2274</u> )        |
| 26               | cc aag tct ccc gtg acG<br>( SEQ ID No: <u>±2275</u> )        |
| 27               | gca ctg aca aac atc gcC<br>( SEQ ID No: <u>±2276</u> )       |

Table 17B-1

| <b>Probe No.</b> | <b>Base Sequence</b>                                    |
|------------------|---------------------------------------------------------|
| 0                | g ggg gtg tac cgg gcA ( SEQ ID No: <u>292277</u> )      |
| 1                | cg cag ggg cgg cct gT ( SEQ ID No: <u>302278</u> )      |
| 2                | ag ggg gcc cgg gcg T ( SEQ ID No: <u>312279</u> )       |
| 3                | gg gcg tcg gtg gac aG ( SEQ ID No: <u>322280</u> )      |
| 4                | gg gcg tcg gtg gac agA ( SEQ ID No: <u>332281</u> )     |
| 5                | ca gat ttc tat cca agc caC ( SEQ ID No: <u>342282</u> ) |
| 6                | gc gac gtg ggg gtg taT ( SEQ ID No: <u>352283</u> )     |
| 7                | cg cag ggg cgg cct aG ( SEQ ID No: <u>362284</u> )      |
| 8                | g cag ggg cgg cct agC ( SEQ ID No: <u>372285</u> )      |
| 9                | cg cag ggg cgg cct gA ( SEQ ID No: <u>382286</u> )      |
| 10               | g cag ggg cgg cct gaC ( SEQ ID No: <u>392287</u> )      |
| 11               | g aag gac atc ctg gag gA ( SEQ ID No: <u>402288</u> )   |
| 12               | g gac atc ctg gag agg aaA ( SEQ ID No: <u>412289</u> )  |
| 13               | ct ccc cag cgt gga gaC ( SEQ ID No: <u>422290</u> )     |
| 14               | c cgg tgg ttt cgg aat gG ( SEQ ID No: <u>432291</u> )   |
| 15               | ctg ctg ggg ctg cct gA ( SEQ ID No: <u>442292</u> )     |
| 16               | c ttc gac agc gac gtg gA ( SEQ ID No: <u>452293</u> )   |
| 17               | cg ctg ggg cgg cct gA ( SEQ ID No: <u>462294</u> )      |
| 18               | ct ccc cag cat gga gaC ( SEQ ID No: <u>472295</u> )     |
| 19               | cac ccc agc ctc cag aA ( SEQ ID No: <u>482296</u> )     |
| 20               | aac cga gag gag tac gcA ( SEQ ID No: <u>492297</u> )    |
| 21               | g ctg ggg cgg cct gC ( SEQ ID No: <u>502298</u> )       |
| 22               | agg acc cgg gcg gag T ( SEQ ID No: <u>512299</u> )      |
| 23               | c ctc cag aac ccc atc aT ( SEQ ID No: <u>522300</u> )   |
| 24               | cg gag cgc gtg cgt cT ( SEQ ID No: <u>532301</u> )      |
| 25               | g acg ccg ctg ggg cC ( SEQ ID No: <u>542302</u> )       |
| 26               | cag aag gaa gtc ctg gag A ( SEQ ID No: <u>552303</u> )  |
| 27               | tac ttc acc aac ggg acC ( SEQ ID No: <u>562304</u> )    |

Table 17B-2

| <b>Probe No.</b> | <b>Base Sequence</b>                                    |
|------------------|---------------------------------------------------------|
| 28               | cgg gcg gag ttg gac aC ( SEQ ID No: <u>572305</u> )     |
| 29               | cg tcg gtg gac acc gtA ( SEQ ID No: <u>582306</u> )     |
| 30               | gtg ggg gtg tat cgg gT ( SEQ ID No: <u>592307</u> )     |
| 31               | tg act ccc cag cat gcC ( SEQ ID No: <u>602308</u> )     |
| 32               | g gaa atg act ccc cag cA ( SEQ ID No: <u>612309</u> )   |
| 33               | gg aac agc cag aag gaa gA ( SEQ ID No: <u>622310</u> )  |
| 34               | acc aac ggg acc gag cT ( SEQ ID No: <u>632311</u> )     |
| 35               | g ccg ctg ggg cgg cT ( SEQ ID No: <u>642312</u> )       |
| 36               | cc atg tgc tac ttc acc aaT ( SEQ ID No: <u>652313</u> ) |
| 37               | tg tat cgg gcg gtg acC ( SEQ ID No: <u>662314</u> )     |
| 38               | g ttt cgg aat gac cag gaA ( SEQ ID No: <u>672315</u> )  |
| 39               | gtg cgt ctt gtg acc aga T ( SEQ ID No: <u>682316</u> )  |
| 40               | g gcg ttc cgc ggg atc T ( SEQ ID No: <u>692317</u> )    |
| 41               | t agg aat ggt gac tgg acT ( SEQ ID No: <u>702318</u> )  |
| 42               | gag cgc gtg cgt ctt gtA ( SEQ ID No: <u>712319</u> )    |
| 43               | ca ggc cag atc aaa gtc cA ( SEQ ID No: <u>722320</u> )  |
| 44               | c gtg ggg gtg tac cgC ( SEQ ID No: <u>732321</u> )      |
| 45               | ag gaa gtc ctg gag agg A ( SEQ ID No: <u>742322</u> )   |
| 46               | a cac aac tac gag gtg gG ( SEQ ID No: <u>752323</u> )   |
| 47               | gtg cgt ctt gta acc aga T ( SEQ ID No: <u>762324</u> )  |
| 48               | g cag ggg cgg cct gtc ( SEQ ID No: <u>772325</u> )      |
| 49               | c aac tac gag gtg gcg tT ( SEQ ID No: <u>782326</u> )   |
| 50               | g cgg cct gat gcc gag A ( SEQ ID No: <u>792327</u> )    |
| 51               | gg gcg gtg acg cgg cT ( SEQ ID No: <u>802328</u> )      |
| 52               | cg ctg ggg cgg cct gA ( SEQ ID No: <u>812329</u> )      |
| 53               | ggg acc cgg gcg gag T ( SEQ ID No: <u>822330</u> )      |

Table 18A

| <b>Probe No.</b> | <b>Base Sequence</b>                                         |
|------------------|--------------------------------------------------------------|
| 0                | gga gat gag Gag ttc tac g ( SEQ ID No: <u>832331</u> )       |
| 1                | c aga cac caG ggg cca tt ( SEQ ID No: <u>842332</u> )        |
| 2                | gtg ggc ctc Atg ggc att ( SEQ ID No: <u>852333</u> )         |
| 3                | c acc ctc atC tgt ctt gtg ( SEQ ID No: <u>862334</u> )       |
| 4                | aat ggg cac Gca gtc aca ( SEQ ID No: <u>872335</u> )         |
| 5                | g gtc tgc Acc ctg ggg ( SEQ ID No: <u>882336</u> )           |
| 6                | ga ggt gaa gGc att gtg g ( SEQ ID No: <u>892337</u> )        |
| 7                | c aac atc acC tgg ctg ag ( SEQ ID No: <u>902338</u> )        |
| 8                | gg aag gag Gct gcc tgg ( SEQ ID No: <u>912339</u> )          |
| 9                | ctg ttc cac aga Ctt aga c c ttt ( SEQ ID No: <u>922340</u> ) |
| 10               | gag att cca Aca cct atg tc ( SEQ ID No: <u>932341</u> )      |
| 11               | c acc gtg aCg agc cct t ( SEQ ID No: <u>942342</u> )         |
| 12               | ctc cct tct gAt gat gag at ( SEQ ID No: <u>952343</u> )      |
| 13               | c aac tct acT gct gct acc ( SEQ ID No: <u>962344</u> )       |
| 14               | c atc atc cGa ggc ctg c ( SEQ ID No: <u>972345</u> )         |
| 15               | c aag tct ccT gtg acg ct ( SEQ ID No: <u>982346</u> )        |
| 16               | ggc ctg gac Aag cct ctt ( SEQ ID No: <u>992347</u> )         |
| 17               | c gcc ctg ggA ttg tct gt ( SEQ ID No: <u>1002348</u> )       |
| 18               | gtt gcc tct tAt ggt gta aa ( SEQ ID No: <u>1012349</u> )     |
| 19               | aac ttg aac agT ctg att aaa c ( SEQ ID No: <u>1022350</u> )  |
| 20               | a cg ttt gac cGg caa ttt gca c ( SEQ ID No: <u>1032351</u> ) |
| 21               | ctc cct tct Tct gag gag ( SEQ ID No: <u>1042352</u> )        |
| 22               | ct tac ggt cTc tct ggc c ( SEQ ID No: <u>1052353</u> )       |
| 23               | g cac tgg ggA ctg gac aa ( SEQ ID No: <u>1062354</u> )       |
| 24               | ct ggc cag tTc acc cat g ( SEQ ID No: <u>1072355</u> )       |
| 25               | ccc gtg acG ctg ggt c ( SEQ ID No: <u>1082356</u> )          |
| 26               | ca aac atc gcC gtg aca aaa ( SEQ ID No: <u>1092357</u> )     |

Table 18B-1

| <b>Probe No.</b> | <b>Base Sequence</b>                                    |
|------------------|---------------------------------------------------------|
| 0                | tac cgg gcA gtg acg cc ( SEQ ID No: <u>1102358</u> )    |
| 1                | g cgg cct gTt gcc gag ( SEQ ID No: <u>1112359</u> )     |
| 2                | c cgg gcg Tcg gtg gac ( SEQ ID No: <u>1122360</u> )     |
| 3                | g gtg gac aGg gtg tgc a ( SEQ ID No: <u>1132361</u> )   |
| 4                | g gtg gac agA gtg tgc ag ( SEQ ID No: <u>1142362</u> )  |
| 5                | t cca agc caC atc aaa gtc ( SEQ ID No: <u>1152363</u> ) |
| 6                | ggg gtg taT cgg gcg g ( SEQ ID No: <u>1162364</u> )     |
| 7                | g cgg cct aGc gcc gag ( SEQ ID No: <u>1172365</u> )     |
| 8                | cgG cct agC gcc gag t ( SEQ ID No: <u>1182366</u> )     |
| 9                | g cgg cct gAc gcc gag ( SEQ ID No: <u>1192367</u> )     |
| 10               | cgG cct gaC gcc gag t ( SEQ ID No: <u>1202368</u> )     |
| 11               | g cgg cct gAt gcc gag ( SEQ ID No: <u>1212369</u> )     |
| 12               | c ctg gag gAg gac cgg ( SEQ ID No: <u>1222370</u> )     |
| 13               | gag agg aaA cgg gcg gc ( SEQ ID No: <u>1232371</u> )    |
| 14               | g cgt gga gaC gtc tac ac ( SEQ ID No: <u>1242372</u> )  |
| 15               | t cgg aat gGc cag gag g ( SEQ ID No: <u>1252373</u> )   |
| 16               | g ctg cct gAc gcc gag ( SEQ ID No: <u>1262374</u> )     |
| 17               | c gac gtg gAg gtg tac c ( SEQ ID No: <u>1272375</u> )   |
| 18               | g ccc cct gAc gcc gag ( SEQ ID No: <u>1282376</u> )     |
| 19               | g cat gga gaC gtc tac ac ( SEQ ID No: <u>1292377</u> )  |
| 20               | gc ctc cag aAc ccc atc a ( SEQ ID No: <u>1302378</u> )  |
| 21               | g gag tac gcA cgc ttc ga ( SEQ ID No: <u>1312379</u> )  |
| 22               | ccg cct gCc gcc gag ( SEQ ID No: <u>1322380</u> )       |
| 23               | gg gcg gag Ttg gac acg ( SEQ ID No: <u>1332381</u> )    |
| 24               | ac ccc atc aTc gtg gag t ( SEQ ID No: <u>1342382</u> )  |
| 25               | gc gtg cgt cTt gtg acc a ( SEQ ID No: <u>1352383</u> )  |
| 26               | g ctg ggg cCg cct gac ( SEQ ID No: <u>1362384</u> )     |
| 27               | c ctg gag Agg acc cgg ( SEQ ID No: <u>1372385</u> )     |

Table 18B-2

| <b>Probe No.</b> | <b>Base Sequence</b>                                        |
|------------------|-------------------------------------------------------------|
| 28               | aac ggg acC gag cgc g ( SEQ ID No: <u>1382386</u> )         |
| 29               | ag ttg gac aCg gtg tgc a ( SEQ ID No: <u>1392387</u> )      |
| 30               | g gac acc gtA tgc aga ca ( SEQ ID No: <u>1402388</u> )      |
| 31               | g tat cgg gTg gtg acg c ( SEQ ID No: <u>1412389</u> )       |
| 32               | cc cag cat gcc g t gtc tac ( SEQ ID No: <u>1422390</u> )    |
| 33               | t ccc cag cAt gga gac g ( SEQ ID No: <u>1432391</u> )       |
| 34               | ag aag gaa gAc ctg gag ag ( SEQ ID No: <u>1442392</u> )     |
| 35               | g acc gag cTc gtg cgg ( SEQ ID No: <u>1452393</u> )         |
| 36               | g ggg cgg cTt gac gcc ( SEQ ID No: <u>1462394</u> )         |
| 37               | c ttc acc aaT ggg acg ga ( SEQ ID No: <u>1472395</u> )      |
| 38               | gcg gtg acC ccg cag g ( SEQ ID No: <u>1482396</u> )         |
| 39               | t gac cag gaA gag aca gc ( SEQ ID No: <u>1492397</u> )      |
| 40               | t gtg acc aga Tac atc tat aa ( SEQ ID No: <u>1502398</u> )  |
| 41               | gc ggg atc Ttg cag agg ( SEQ ID No: <u>1512399</u> )        |
| 42               | t gac tgg actT ttc cag atc ( SEQ ID No: <u>1522400</u> )    |
| 43               | g cgt ctt gtA acc aga cac ( SEQ ID No: <u>1532401</u> )     |
| 44               | tc aaa gtc cAg tgg ttt cg ( SEQ ID No: <u>1542402</u> )     |
| 45               | gtg tac cgC gcg gtg ac ( SEQ ID No: <u>1552403</u> )        |
| 46               | g gag agg Acc cgg gcg ( SEQ ID No: <u>1562404</u> )         |
| 47               | c gag gtg gGt tac cgc ( SEQ ID No: <u>1572405</u> )         |
| 48               | g cgt ctt gtA acc aga tac ( SEQ ID No: <u>1582406</u> )     |
| 49               | t gta acc aga Tac atc tat aac ( SEQ ID No: <u>1592407</u> ) |
| 50               | cgg cct gtC gcc gag t ( SEQ ID No: <u>1602408</u> )         |
| 51               | c cgg gcg gAg ttg gac ( SEQ ID No: <u>1612409</u> )         |
| 52               | g gtg gcg tTc cgc ggg ( SEQ ID No: <u>1622410</u> )         |
| 53               | gat gcc gag Aac tgg aac ( SEQ ID No: <u>1632411</u> )       |
| 54               | acg ccg cTg ggg cgg ( SEQ ID No: <u>1642412</u> )           |

**Table 19A**

| Allele Number | Probe Number for Detection |       |
|---------------|----------------------------|-------|
| DQA1*010101   | 0                          |       |
| DQA1*010102   | 1                          |       |
| DQA1*010201   | 2                          |       |
| DQA1*010202   | 3                          | 2     |
| DQA1*0103     | 4                          |       |
| DQA1*010401   | 5                          |       |
| DQA1*010402   | 6                          | 7     |
| DQA1*0105     | 8                          |       |
| DQA1*0106     | 9                          |       |
| DQA1*0201     | 10                         |       |
| DQA1*030101   | 11                         |       |
| DQA1*0302     | 12                         |       |
| DQA1*0303     | 13                         |       |
| DQA1*040101   | 14                         | 15    |
| DQA1*040102   | 16                         |       |
| DQA1*050101   | 17                         | 18    |
| DQA1*050102   | 19                         | 20    |
| DQA1*0502     | 21                         |       |
| DQA1*0503     | 22                         |       |
| DQA1*0504     | 23                         |       |
| DQA1*0505     | 24                         |       |
| DQA1*060101   | 25                         | 26 15 |
| DQA1*060102   | 27                         |       |

**Table 19B-1**

| Allele Number | Probe Number for Detection |    |    |    |
|---------------|----------------------------|----|----|----|
| DQB1*050101   | 0                          | 1  | 2  | 3  |
| DQB1*050102   | 4                          |    |    |    |
| DQB1*050201   | 5                          |    |    |    |
| DQB1*050202   | 6                          | 7  | 8  | 4  |
| DQB1*050301   | 9                          | 10 | 4  |    |
| DQB1*050302   | 6                          | 11 |    |    |
| DQB1*0504     | 7                          | 12 |    |    |
| DQB1*0201     | 13                         | 14 |    |    |
| DQB1*0202     | 15                         | 14 |    |    |
| DQB1*0203     | 16                         | 15 |    |    |
| DQB1*030101   | 17                         | 18 | 19 | 20 |
| DQB1*030102   | 17                         | 18 |    |    |
| DQB1*0302     | 21                         | 22 | 23 | 24 |
| DQB1*030302   | 18                         | 23 | 24 |    |
| DQB1*030303   | 25                         | 6  | 26 | 18 |
| DQB1*0304     | 17                         | 22 | 19 | 20 |
| DQB1*030501   | 28                         | 23 |    |    |
| DQB1*030502   | 6                          | 22 | 27 | 29 |
| DQB1*0306     | 26                         | 30 |    |    |
| DQB1*0307     | 31                         |    |    |    |
| DQB1*0308     | 21                         | 6  | 22 | 29 |
| DQB1*0309     | 32                         |    |    |    |
| DQB1*0310     | 6                          | 18 | 33 | 19 |
| DQB1*0311     | 21                         | 6  | 22 | 27 |
| DQB1*0312     | 25                         | 21 | 6  | 18 |
| DQB1*0313     | 34                         |    |    |    |
| DQB1*0401     | 35                         |    |    |    |
| DQB1*0402     | 36                         |    |    |    |
| DQB1*060101   | 37                         |    |    |    |
| DQB1*060102   | 38                         |    |    |    |
| DQB1*060103   | 39                         |    |    |    |
| DQB1*0602     | 40                         | 41 | 42 |    |
| DQB1*0603     | 43                         | 41 | 42 |    |

**Table 19B-2**

| Allele Number | Probe Number for Detection |    |    |    |    |    |
|---------------|----------------------------|----|----|----|----|----|
| DQB1*060401   | 27                         | 44 |    |    |    |    |
| DQB1*060402   | 43                         | 45 | 27 | 46 | 47 |    |
| DQB1*060501   | 48                         | 49 | 27 | 46 | 47 |    |
| DQB1*060502   | 48                         | 50 | 27 | 46 | 51 |    |
| DQB1*0606     | 48                         | 49 | 27 | 46 |    |    |
| DQB1*0607     | 43                         | 11 | 27 | 46 | 47 |    |
| DQB1*0608     | 43                         | 45 | 52 |    |    |    |
| DQB1*0609     | 49                         | 27 | 44 |    |    |    |
| DQB1*0610     | 7                          | 41 |    |    |    |    |
| DQB1*061101   | 40                         | 45 | 11 | 52 |    |    |
| DQB1*061102   | 48                         | 49 | 45 | 11 | 41 |    |
| DQB1*0612     | 49                         | 44 |    |    |    |    |
| DQB1*0613     | 40                         | 45 | 52 |    |    |    |
| DQB1*0614     | 43                         | 45 | 11 | 41 |    |    |
| DQB1*0615     | 40                         | 11 | 27 | 46 | 47 |    |
| DQB1*0616     | 53                         |    |    |    |    |    |
| DQB1*0617     | 43                         | 29 |    |    |    |    |
| DQB1*0618     | 48                         | 27 | 41 |    |    |    |
| DQB1*0619     | 25                         | 6  | 54 | 11 | 23 | 41 |
| DQB1*0620     | 40                         | 45 | 11 |    |    |    |

**Table 20A**

| Allele Number | Probe Number for Detection |
|---------------|----------------------------|
| DQA1*010101   | 0                          |
| DQA1*010102   | 1                          |
| DQA1*010201   | 2                          |
| DQA1*010202   | 3                          |
| DQA1*0103     | 4                          |
| DQA1*010401   | 5                          |
| DQA1*010402   | 6                          |
| DQA1*0105     | 7                          |
| DQA1*0106     | 8                          |
| DQA1*0201     | 9                          |
| DQA1*030101   | 10                         |
| DQA1*0302     | 11                         |
| DQA1*0303     | 12                         |
| DQA1*040101   | 13                         |
| DQA1*040102   | 14                         |
| DQA1*050101   | 15                         |
| DQA1*050102   | 16                         |
| DQA1*0502     | 17                         |
| DQA1*0503     | 18                         |
| DQA1*0504     | 19                         |
| DQA1*0505     | 20                         |
| DQA1*060101   | 21                         |
| DQA1*060102   | 22                         |
| DQA1*060103   | 23                         |
| DQA1*060104   | 24                         |
| DQA1*060105   | 25                         |
| DQA1*060106   | 26                         |

**Table 20B-1**

| Allele Number | Probe Number for Detection |    |    |    |
|---------------|----------------------------|----|----|----|
| DQB1*050101   | 0                          | 1  | 2  | 3  |
| DQB1*050102   | 4                          |    |    |    |
| DQB1*050201   | 5                          |    |    |    |
| DQB1*050202   | 6                          | 7  | 8  | 4  |
| DQB1*050301   | 9                          | 10 | 4  |    |
| DQB1*050302   | 6                          | 11 |    |    |
| DQB1*0504     | 7                          | 12 |    |    |
| DQB1*0201     | 13                         | 14 |    |    |
| DQB1*0202     | 15                         | 14 |    |    |
| DQB1*0203     | 16                         | 15 |    |    |
| DQB1*030101   | 17                         | 18 | 19 | 20 |
| DQB1*030102   | 17                         | 18 |    |    |
| DQB1*0302     | 21                         | 22 | 23 | 24 |
| DQB1*030302   | 18                         | 23 | 24 |    |
| DQB1*030303   | 25                         | 6  | 26 | 18 |
| DQB1*0304     | 17                         | 22 | 19 | 20 |
| DQB1*030501   | 28                         | 23 |    |    |
| DQB1*030502   | 6                          | 22 | 27 | 29 |
| DQB1*0306     | 26                         | 30 |    |    |
| DQB1*0307     | 31                         |    |    |    |
| DQB1*0308     | 21                         | 6  | 22 | 29 |
| DQB1*0309     | 32                         |    |    |    |
| DQB1*0310     | 6                          | 18 | 33 | 19 |
| DQB1*0311     | 21                         | 6  | 22 | 27 |
| DQB1*0312     | 25                         | 21 | 6  | 18 |
| DQB1*0313     | 34                         |    |    |    |
| DQB1*0401     | 35                         |    |    |    |
| DQB1*0402     | 36                         |    |    |    |
| DQB1*060101   | 37                         |    |    |    |
| DQB1*060102   | 38                         |    |    |    |
| DQB1*060103   | 39                         |    |    |    |
| DQB1*0602     | 40                         | 41 | 42 |    |
| DQB1*0603     | 43                         | 41 | 42 |    |

**Table 20B-2**

| Allele Number | Probe Number for Detection |    |    |    |    |
|---------------|----------------------------|----|----|----|----|
| DQB1*060401   | 27                         | 44 |    |    |    |
| DQB1*060402   | 43                         | 45 | 27 | 46 | 47 |
| DQB1*060501   | 48                         | 49 | 27 | 46 | 47 |
| DQB1*060502   | 48                         | 50 | 27 | 46 | 51 |
| DQB1*0606     | 48                         | 49 | 27 | 46 |    |
| DQB1*0607     | 43                         | 11 | 27 | 46 | 47 |
| DQB1*0608     | 43                         | 45 | 52 |    |    |
| DQB1*0609     | 49                         | 27 | 44 |    |    |
| DQB1*0610     | 7                          | 41 |    |    |    |
| DQB1*061101   | 40                         | 45 | 11 | 52 |    |
| DQB1*061102   | 48                         | 49 | 45 | 11 | 41 |
| DQB1*0612     | 49                         | 44 |    |    |    |
| DQB1*0613     | 40                         | 45 | 52 |    |    |
| DQB1*0614     | 43                         | 45 | 11 | 41 |    |
| DQB1*0615     | 40                         | 11 | 27 | 46 | 47 |
| DQB1*0616     | 53                         |    |    |    |    |
| DQB1*0617     | 43                         | 29 |    |    |    |
| DQB1*0618     | 48                         | 27 | 41 |    |    |
| DQB1*0619     | 25                         | 6  | 54 | 11 | 23 |
| DQB1*0620     | 40                         | 45 | 11 |    | 41 |

(Example 11)

Probes for identification of HLA-DR allele

Extraction of DNA from 1 ml of human blood was performed using GFX Genomic Blood DNA Purification Kit from Amersham Biosciences in the same manner as in Example 1.

Next, quantitative PCR was carried out in the same manner as in Example 1 except that probes in the probe list 1 in Tables 21-1 and 21-2 were used and 4 10  $\mu$ l of the mixed primers consisting of 1  $\mu$ l each of respective solutions of the following primers (10 pmol/ $\mu$ l) and 4  $\mu$ l of ultra pure water were used:

AGAGTACTCCAAGAACGTG (SEQ ID NO: 8223314)

CCGCTGCACCGTGAAGCT (SEQ ID NO: 8233315)

15 TCGCTGCACTGTGAAGCT (SEQ ID NO: 8243316)

CCTCTGCACTGTGAAGCT (SEQ ID NO: 8253317).

Referring to Amp Plot and Dissociation curves on a display of 5700 software, it was found that probes 62, 12, and 152 were amplified. Therefore, it 20 was identified as DRB1\*040502 and DRB1\*130202 referring to the allele-probe list 1 (Tables 23-1 to 23-13).

(Example 12)

Extraction of DNA from 1 ml of human blood was 25 performed in the same way as in Example 3. PCR of human HLA-DRB exon 2 was then performed in the same manner as in Example 2 except that 6  $\mu$ l of the mixed

primer consisting of 1  $\mu$ l each of the solutions containing the following sequences at 10 pmol/ $\mu$ l respectively, and 9  $\mu$ l of ultra pure water were used:

CCGGATCCTCGTGTCCCCACAGCACG (SEQ ID NO: 8263318)

5 AACCCCGTAGTTGTGTCTGCA (SEQ ID NO: 8273319)

AGAGTACTCCAAGAACGTG (SEQ ID NO: 8223314)

CCGCTGCACCGTGAAGCT (SEQ ID NO: 8233315)

TCGCTGCACTGTGAAGCT (SEQ ID NO: 8243316)

CCTCTGCACTGTGAAGCT (SEQ ID NO: 8253317) .

10 At the same time, a DNA microarray was prepared to identify the allele in the specimen described above in the same manner as in Example 2, except that probes in the probe list of Tables 22-1 to 22-7 were used to form the probe spots respectively.

15 Then, hybridization was performed using the above specimen and the prepared DNA microarray in the same manner as in Example 2. The fluorometry measurement was conducted with GenePix4000B (Axon) .

As a result it was found that probes 59, 133,  
20 and 134 were amplified. Therefore, it was identified as DRB1\*040502 and DRB1\*130202 referring to the allele-probe list 1 (Tables 24-1 to 24-13) .

#### Allele list

25 DRB1\*010101 :

atggtgtgtctgaagctccctggaggctcctgcatgacagcgctgacagtgacactgtggctgagctccccac  
tggctttggctggggacacccgaccacgtttttgtggcagcttaagttgaatgtcatttcttcaatgggacgga

gcgggtcggttgcggaaAagaTgcataccatataaccaagaggagtCcggtcgcttcgacacgcacgtggggagtag  
 cggcggtgacggagctggggcggcctgaTgcCgagactggaacagccagaaggacccctggagcagaggcgg  
 ccggtggacacactactgcagacacaactacgggttgGttagagttcacagtgcagcggcag (SEQ ID  
NO:-1-2493) ;  
 5 DRB1\*010102 :  
 cacgtttcttgcggcagcttaagttgaatgtcattttcaatgggacggagcgggtgcgggtgtggaaagatg  
 catctataaccaagaggaAtccgtgcgttcgacagcgacgtggggagttaccggcgggtgacggagctggggcgg  
 cctgatgccgagttactggaacagccagaaggacccctggagcagaggcggccgcgggtggacacactgcagac  
 acaactacgggttgttagagttcacagtgcagcggcag (SEQ ID NO:-2-2494) ;  
 10 DRB1\*010201 :  
 ggggacacccgaccacgtttcttgcggcagcttaagttgaatgtcattttcaatgggacggagcgggtgcgg  
 tgctggaaagatgcataaccaagaggagtccgtgcgttcgacagcgacgtggggagttaccggcgggtgac  
 ggagctggggcggcctgtgccgagttactggaacagccagaaggacccctggagcagaggcggccgcgggtggac  
 acctaTtgcagacacaactacgggGtgtggagagttcacagtgcagcggcag (SEQ ID NO:-3-2495) ;  
 15 DRB1\*010202 :  
 cacgtttcttgcggcagcttaagttgaatgtcattttcaatgggacggagcgggtgcgggtgtggaaagatg  
 catctataaccaagaggagtccgtgcgttcgacagcgacgtggggagttaccggcgggtgacggagctggggcgg  
 cctgatgccgagttactggaacagccagaaggacccctggagcagaggcggccgcGtggacacattgcagac  
 acaactacgggtgtgg (SEQ ID NO:-4-2496) ;  
 20 DRB1\*0103 :  
 atgggtgtctgaagctccctggaggctcctgcatgacacgcgtacagtgcacactgtgggtgtggactccccac  
 tggctttggctggggacacccgaccacgtttttgtggcagcttaagttgaatgtcattttcaatgggacgga  
 ggggtgcgggtgtggaaagatgcataaccaagaggagtccgtgcgttcgacagcgacgtggggagttac  
 cggcggtgacggagctggggcggcctgtggcagttactggaacagccagaaggacAtcctggaaagacGAgcgg  
 25 ccgcgggtggacacactgcagacacaactacgggttgttagagttcacagtgcagcggcag (SEQ ID  
NO:-5-2497) ;  
 DRB1\*0104 :

ggggacacccgaccacgttcttgtgcagcttaagttgaatgtcattcttaatggacggacgggtgcgt  
 tgctggaaagatgcataccaaaggaggactcgctgcgttcgacagcgacgtggggagtaccggcggtgac  
 ggagctggggcggcctgatgccgacttggaaacagccagaaggacccctggagcagaggcggcccggtggac  
 aaTactgcagacacaactacgggtgtGagagcttcacagtgcagcggcag (SEQ ID NO:6-2498) ;

5 DRB1\*0105 :

cacgtttcttgtgcagcttaagttgaatgtcattcttaatggacggacgggtgcgttgctggaaagatg  
 catctataaccaagaggaggccgtgcgttcgacagcgacgtgAgggagtaccggcggtgacggagctggggcgg  
 cctgatgccgacttggaaacagccagaaggacccctggagcagaggcggcccggtggacacctactgcagac  
 acaactacgggttggtgagagcttcacagtgcagcggcag (SEQ ID NO:7-2499) ;

10 DRB1\*0106 :

cacgtttcttgtgcagcttaagttgaatgtcattcttaatggacggacgggtgcgttgctggaaagatg  
 catctataaccaagaggaggccgtgcgttcgacagcgacgtggggagtaccggcggtgacggagctggggcgg  
 cctgatgccgacttggaaacagccagaaggacccctggagcaggCgcggcccggtggacacctactgcagac  
 acaactacgggttggtGagagcttcacagtgcagcggcag (SEQ ID NO:8-2500) ;

15 DRB1\*0107 :

cacgtttcttgtggGagcttaagttgaatgtcattcttaatggacggacgggtgcgttgctggaaagatg  
 catctataaccaagaggaggccgtgcgttcgacagcgacgtggggagtaccggcggtgacggagctggggcgg  
 cctgatgccgacttggaaacagccagaaggacccctggagcagaggcggcccggtggacacctactgcagac  
 acaactacgggttggtgagagcttcacagtgcagcggcag (SEQ ID NO:9-2501) ;

20 DRB1\*0108 :

cacgtttcttgtgcagcttaagttgaatgtcattcttaatggacggacgggtgcgttgctggaaagatg  
 catctataaccaagaggaggAgtgcgttcgacagcgacgtggggagtaccggcggtgacggagctggggcgg  
 cctgatgccgacttggaaacagccagaaggacccctggagcagaggcggcccggtggacacctactgcagac  
 acaactacgggttggtgagagcttcacagtgcagcggcag (SEQ ID NO:10-2502) ;

25 DRB1\*0109 :

cacgtttcttgtgcagcttaagttgaatgtcattcttaatggacggacgggtgcgttgctggaaagatg  
 catctataaccaagaggaggccgtgcgttcgacagcgacgtggggagtaccggcggtgacggagctggggcgg

cctgatccgagtaactggAACAGCCAGAAGGACCTCCTGGAGCAGGCAGGGCGCGGTGGACACCTACTGCAGAC  
 ACAACTACGGGGTTGGTGGAGAGCTCACAGTCAGCGCGAG (SEQ ID NO:1-1-2503) ;

DRB1\*0110 :

5 cacgtttcttgcgttggcagttaaaggtaatgtcatttcataatggacggagcgggtgcggttctggaaagatg  
 catctataaccaagaggagtccgtgcgttcgcacagcgacgtggggagttccggcggtgacggagctggggcg  
 cctgatccgagtaactggAACAGCCAGAAGGACCTCCTGGAGCAGGCAGGGCGCGGTGGACACCTACTGCAGAC  
 ACAACTACGGGGTTGGTGGAGAGCTCACAGTCAGCGCGAG (SEQ ID NO:1-2-2504) ;

DRB1\*030101 :

10 ggggacaccagaccacgtttcttggagtaactctacgtctgagtgtcatttcataatggacggagcgggtgcgg  
 AcctggacagataacttcataaccaggaggaggAAcgtgcgttcgcacagcgacgtggggagttccggcggtgac  
 ggagctggggcgccctgtatgccgagtaactggAACAGCCAGAAGGACCTCCTGGAGCAGGCAGGGCGCGGTGGAC  
 aActactgcagacacaactacggggttgtGgagagcttcacagtgcagcgccgag (SEQ ID NO:1-3-2505) ;

DRB1\*030102 :

15 cacgtttcttggagtaactctacgtctgagtgtcatttcataatggacggagcgggtgcggtaacctggacagata  
 ctccataaccaggaggagaacgtgcgttcgcacagcgacgtggggagttccggcggtgacggagctggggcg  
 cctgatccgagtaactggAACAGCCAGAAGGACCTCCTGGAGCAGGCAGGGCGCGGTGGACAAActgcagac  
 ACAACTACGGGGTTGTGgagagcttcacagtgcagcg (SEQ ID NO:1-4-2506) ;

DRB1\*030201 :

20 ggggacaccagaccacgtttcttggAgtactctacgtctgagtgtcatttcataatggacggagcgggtgcgg  
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 ggagctggggcgccctgtatgccgagtaactggAACAGCCAGAAGGACCTCCTGGAGCAGGCAGGGCGCGGTGGAC  
 aActactgcagacacaactacggggttgtGgagagcttcacagtgcagcgccgag (SEQ ID NO:1-5-2507) ;

25 DRB1\*030202 :

ggggacaccagaccacgtttcttggagtaactctacgtctgagtgtcatttcataatggacggagcgggtgcgg  
 tcctggAGagataacttcataaccaggaggaggAAcgtgcgttcgcacagcgacgtggggagttccggcggtgac

ggagctggggcggcgtatgccgacttggaaacagccagaaggacccctggagcagaagcggggccGggtgac  
 aaTactgcagacacaactacggggtttgtgagagcttcacagtgcagcggcag (SEQ ID NO:1-6  
2508) ;

DRB1\*0303 :

5 tactctacgtctgagtgtcatttcaatggacggagcgggtgcggcttgcGagatacttcCataaccagg  
 aggagAAcgtgcgcgttcgacagcgacgtggggagtaccggcggtgacggagctggggccctgtgccgagta  
 ctggaaacagccagaaggacccctggagcagaagcggggccGggtgacActactgcagacacaactacggggtt  
 gtGgagagcttcacagtgcagcggcga (SEQ ID NO:1-7-2509) ;

DRB1\*0304 :

10 cacgtttcttggagttactctacgtctgagtgtcatttcaatggacggagcgggtgcggtAcctggacagata  
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 cctgatgccgagttactggaaacagccagaaggacccctggagcagaagcggggccGggtgacActactgcagac  
 acaactacggggttgtGgagagcttcacagtgcagcggcag (SEQ ID NO:1-8-2510) ;

DRB1\*030501 :

15 cacgtttcttggagttactctacgtctgagtgtcatttcaatggacggagcgggtgcggtAcctggacagata  
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 cctgatgccgagttactggaaacagccagaaggacccctggagcagaagcggggccGggtgacActactgcagac  
 acaactacggggttgtgagagcttcacagtgcagcggcag (SEQ ID NO:1-9-2511) ;

DRB1\*030502 :

20 cacgtttcttggagttactctacgtctgagtgtcatttcaatggacggagcgggtgcggtacctggacagata  
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 cctgatgccgagttactggaaacagccagaaggacccctggagcagaagcggggccgggtggacaActactgcagac  
 acaactacggggttgtgagagcttcacGgtgcagcggcag (SEQ ID NO:2-0-2512) ;

DRB1\*0306 :

25 ttcttggagttactctacgtctgagtgtcatttcaatggacggagcgggtgcggtAcctggacagataacttcC  
 ataaccaggaggagAAcgtgcgcgttcgacagcgacgtggggagttccggccgtgacggagctggggccctgt  
 tgccgagttactggaaacagccagaaggacccctggagcagaagcggggccGggtgacActactgcagacacaac

tacggggttgtGgagagctcacagtgcag (SEQ ID NO: 2-12513) ;

DRB1\*0307 :

5 ggggacaccagaccacgtttcttggagtaactctacgtctgagtgtcattttcaatgggacggagcggtgcgt  
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ggagctggggcggcctgatgccgagtaactggAACgtgcgcctcgacagcgacgtggggagttccggcggtgac  
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2514) ;

DRB1\*0308 :

10 ggggacaccagaccacgtttcttggagtaactctacgtctgagtgtcattttcaatgggacggagcggtgcgt  
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ggagctggggcggcctgatAGgagtaactggAACgtgcgcctcgacagcgacgtggggagttccggcggtgac  
aActactgcagacacaactacggggttgtGgagagctcacagtgcagcggcag (SEQ ID NO: 2-3  
2515) ;

DRB1\*0309 :

15 ttggagtaactctacgtctgagtgtcattttcaatgggacggagcggtgcgtacctggacagatacttcata  
accGggaggagaacgtgcgcctcgacagcgacgtggggagttccggcggtgacggagctggggcgcctgatgc  
cgagtactggAACgtgcgcctcgacagcgacgtggggagttccggcggtgacggagctggggcgcctgatgc  
ggggttgtgagagctcacagtgcagcgg (SEQ ID NO: 2-42516) ;

DRB1\*0310 :

20 ggggacaccagaccacgtttcttggagtaactctacgtctgagtgtcattttcaatgggacggagcggtgcgt  
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ggagctggggcggcctgCtgccggactggAACgtgcgcctcgacagcgacgtggggagttccggcggtgac  
aActactgcagacacaactacggggttgtGgagagctcacagtgcagcggcag (SEQ ID NO: 2-5  
2517) ;

25 DRB1\*0311 :

cacgtttcttggagtaactctacgtctgagtgtcattttcaatgggacggagcggtgcgtAcctggacagata  
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cctgatccgagtaactggAACAGCCAGAAGGACCTCCTGGAGCAGAAGCGGGC~~C~~AggtggacaActactgcagac  
 acaactacgggttgtGgagagottcacagtgcagcggcga (SEQ ID NO:2-6-2518) ;

DRB1\*0312 :

ttggagtaactctacgtctgagtgtcatttcttcaatggacggcggtgcggtaacctggacagatacttcata  
 5 accaggaggagaacgtgcgcTTcgacagcgacgtggggagttccggcggtgacggagctggggcggctagCgc  
 cgagtactggAACAGCCAGAAGGACCTCCTGGAGCAGAAGCGGGC~~G~~ggtgacActactgcagacacaactac  
 ggggttgtGgag (SEQ ID NO:2-7-2519) ;

DRB1\*0313 :

cacgtttcttggagtaactctacgtctgagtgtcatttcttcaatggacggcggtgcggtaacctggacagata  
 10 ctccataaccaggaggagaacgtgcgcTTcgacagcgacgtggggagttccggcggtgacggagctggggcgg  
 cctgatccgagtcgtggAACAGCCAGAAGGACCTCCTGGAGCAGAAGCGGGC~~G~~ggtgacActactgcagac  
 acaactacgggttgtGgagagottcacagtgcagcggcag (SEQ ID NO:2-8-2520) ;

DRB1\*0314 :

cacgtttcttggagtaactctacgtctgagtgtcatttcttcaatggacggcggtgcggtaacctggacagata  
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 cctgatccgagtaactggAACAGCCAGAAGGACCTCCTGGAGCAGAAGCGGGC~~G~~ggtgacacctactgcagac  
 acaactacgggttgtgagagottcacagtgcagcggcag (SEQ ID NO:2-9-2521) ;

DRB1\*0315 :

cacgtttcttggagtaactctacgtctgagtgtcatttcttcaatggacggcggtgcggtaacctggacagata  
 20 cttcCataaccaggaggagAAcgtgcgcTTcgacagcgacgtggggagttccggcggtgacggagctggggcgg  
 cctgatccgagtaactggAACAGCCAGAAGGACCTCCTGGAGCAGAAGCGGGC~~G~~ggtgacacctactgcagac  
 acaactacgggttgtGgagagottcacagtgcagcggcga (SEQ ID NO:3-0-2522) ;

DRB1\*0316 :

cacgtttcttggagtaactctacgtctgagtgtcatttcttcaatggacggcggtgcggtaacctggacagata  
 25 ctccataaccaggaggagaacgtgcgcTTcgacagcgacgtggggagttccggcggtgacggagctggggcgg  
 cctgatccgagtaactggAACAGCCAGAAGGACCTCCTGGAGCAGAAGCGGGC~~G~~ggtgacactactgcagac  
 acaactacgggttgtG (SEQ ID NO:3-1-2523) ;

DRB1\*0317 :

cacgtttcttggagactctacta~~cg~~tctgagtgtcattttcaatgggacggagcgggtgcggttc~~tg~~ga~~C~~agata  
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 cctgatgcc~~g~~ag~~t~~act~~g~~gaac~~a~~ccagaagg~~ac~~c~~tc~~tggagc~~ca~~ag~~c~~ggggcc~~ag~~gtggaca~~A~~tactgc~~ag~~ac  
 5 acaactacggg~~tt~~gg~~t~~gag~~a~~g~~g~~ottcac~~ag~~tg~~c~~ag~~cgg~~gag (SEQ ID NO:3-22524) ;

DRB1\*0318 :

cacgtttcttggagactctac~~gt~~tctgagtgtcattttcaatgggacggagcgggtgc~~gg~~ta~~c~~c~~t~~ggac~~a~~gata  
 cttccataaccaggaggaga~~ac~~ctgcgc~~tt~~cgacagcgac~~gt~~g~~C~~ggag~~t~~ccgggc~~gg~~gt~~g~~ac~~gg~~ag~~c~~tggggc~~gg~~  
 cctgatgcc~~g~~ag~~t~~act~~g~~gaac~~a~~ccagaagg~~ac~~c~~tc~~tggagc~~ca~~ag~~c~~ggggcc~~cg~~gg~~t~~ggaca~~A~~ctactgc~~ag~~ac  
 10 acaactacggg~~tt~~gt~~G~~gag~~a~~g~~g~~ottcac~~ag~~tg~~c~~ag~~cgg~~gag (SEQ ID NO:3-32525) ;

DRB1\*0319 :

cacgtttcttggagactctac~~gt~~tctgagtgtcattttcaatgggacggagcgggtgc~~gg~~ta~~c~~c~~t~~ggac~~a~~gata  
 cttccataaccaggaggaga~~ac~~ctgcgc~~tt~~cgacagcgac~~gt~~ggggag~~t~~ccgggc~~gg~~gt~~g~~ac~~gg~~ag~~c~~tggggc~~gg~~  
 cctgatgcc~~g~~ag~~t~~act~~g~~gaac~~a~~ccagaagg~~ac~~At~~c~~c~~t~~ggagc~~ca~~ag~~c~~ggggcc~~G~~gg~~t~~ggaca~~A~~ctactgc~~ag~~ac  
 15 acaactacggg~~tt~~gt~~G~~gag~~a~~g~~g~~ottcac~~ag~~tg~~c~~ag~~cgg~~gag (SEQ ID NO:3-42526) ;

DRB1\*0320 :

cacgtttcttggagactctac~~gt~~tctgagtgtcattttcaatgggacggagcgggtgc~~gg~~ta~~c~~c~~t~~ggac~~a~~gata  
 cttccataaccaggaggaga~~ac~~ctgcgc~~tt~~cgacagcgac~~gt~~ggggag~~t~~ccgggc~~gg~~gt~~g~~ac~~gg~~ag~~c~~tggggc~~gg~~  
 cctgatgcc~~g~~ag~~t~~act~~g~~gaac~~a~~ccagaagg~~ac~~c~~tc~~tggagc~~ca~~ag~~c~~ggggcc~~cg~~gg~~t~~ggaca~~A~~ctactgc~~ag~~ac  
 20 acaactacgggg~~G~~tg~~tg~~gag~~a~~g~~g~~ottcac~~ag~~tg~~c~~ag~~cgg~~gag (SEQ ID NO:3-52527) ;

DRB1\*0321 :

cg~~ttt~~ttggagactctac~~gt~~tctgagtgtcattttcaatgggacggagcgggtgc~~gg~~ttc~~t~~ggac~~a~~gata~~t~~  
 tccataaccaggagg~~Ag~~ctgcgc~~tt~~cgacagcgac~~gt~~ggggag~~t~~ccgggc~~gg~~gt~~g~~ac~~gg~~ag~~c~~tggggc~~gg~~  
 tgatgcc~~g~~ag~~t~~act~~g~~gaac~~a~~ccagaagg~~ac~~c~~tc~~tggagc~~ca~~ag~~c~~ggggcc~~G~~gg~~t~~ggaca~~A~~ctactgc~~ag~~ac  
 25 aactacggg~~tt~~gt~~G~~gag~~a~~g~~g~~ottcac~~ag~~tg~~c~~ag~~cgg~~gag (SEQ ID NO:3-62528)

DRB1\*0322 :

tttcttggagactctac~~gt~~tctgagtgtcattttcaatgggacggagcgggtgc~~gg~~ttac~~c~~ttggac~~a~~gata~~t~~tc

Gataaccaggaggagaacgtgcgcttcgacagcgacgtggggagttccgggcggtgacggagctggggcggcctg  
 atgccgagacttggaaacagccagaaggacccctggagcagaagcggggccgggtggacaactactgcagacacaa  
 ctacgggttgtggagagttcacagtgcagcggcag (SEQ ID NO: ~~3-7~~2529) ;

DRB1\*0323 :

5 cacgtttcttggagactctacgtctgagtgtcatttcttaatgggacggagcgggtgcggtaacctggacagata  
 cttccataaccGggaggagaacgtgcgcttcgacagcgacgtggggagttccggcggtgacggagctgggcgg  
 cctgatgccgagacttggaaacagccagaaggacccctggagcagaagcggggccgggtggacaactactgcagac  
 acaactacgggttgtGgagagttcacagtgcagcggcag (SEQ ID NO: ~~3-8~~2530) ;

DRB1\*0324 :

10 cacgtttcttggagactctacgtctgagtgtcatttcttaatgggacggagcgggtgcggtaacctggacagata  
 cttccataaccaggaggagaacgtgcgcttcgacagcgacgtggggagtTccggcggtgacggagctggcgg  
 cctgatgccgagacttggaaacagccagaaggacccctggagcagaagcggggcCAggtgacaaTtactgcagac  
 acaactacgggttgtGgagagttcacagtgcagcggcag (SEQ ID NO: ~~3-9~~2531) ;

DRB1\*0325 :

15 cacgtttcttggagactctacgtctgagtgtcatttcttaatgggacggagcgggtgcggtaacctggacagata  
 cttccataaccaGggaggagtAcgtgcgcttcgacagcgacgtggggagtTccggcggtgacggagctggcgg  
 cctgatgccgagacttggaaacagccagaaggacccctggagcagaagcggggcGggtgacaaActactgcagac  
 acaactacgggttgtGgagagttcacagtgcagcggcag (SEQ ID NO: ~~4-0~~2532) ;

DRB1\*040101 :

20 atggtgtctgaagTtccctggaggctctgcattggcagctctgacagtgcacactgtatggtgctgagctccccac  
 tggcttggctgggacacccgaccacgtttttggagcaggtaaacatgagtgtcatttcttaacggacgg  
 gcgggtgcggttcctggacagatacttctatccaaggaggatcgtgcgcttcgacagcgacgtggggagtag  
 cggcgggtgacggagctggggccctgatgccgagacttggaaacagccagaaggacccctggagcagaAgcgg  
 ccgcggtgacacacttgcagacacaactacgggttgtggagagttcacagtgcagcggcag (SEQ ID

25 NO: ~~4-1~~2533) ;

DRB1\*040102 :

cacgtttcttggagcaggtaaacatgagtgtcatttcttaacgggacggagcgggtgcggtaacctggacagata

cttctatcaccaagaAagtagtacgtgcgcttcgacagcgacgtggggagtaccggccgtgacggagctggggcgg  
 cctgatgccgagacttggAACAGCCAGAAGGACCTCCTGGAGCAGACGGGCCGCGGTGACACCTACTGCAGAC  
 ACAACTACGGGTTGGTGGAGAGCTTCACAGTCAGCGGCGAG (SEQ ID NO:4-2-2534) ;

DRB1\*0402 :

5 atggtgtgtctgaagTtccctggaggctcctgcatggcagctctgacagtgcacactgtatggtgctgagctccccac  
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 gcggtcggttcctggacagatacttctatcaccaagaggagtcgtgcgcttcgacagcgacgtggggagttac  
 cggcggtgacggagctggggccctgatgccgagacttggAACAGCCAGAAGGACATCCTGGAAAGACGA  
 CGCGGTGGACACCTACTGCAGACACAACACTACGGGTTGTGGAGAGCTTCACAGTCAGCGGCGAG (SEQ ID  
 NO:4-3-2535) ;

DRB1\*040301 :

ggggacacccgaccacgtttcttggagcaggtaaaCatgagtgtcatttcttcaacgggacggagcgggtgcgg  
 tcctggacagatacttctatcaccaagaggagtcgtgcgcttcgacagcgacgtggggagttaccgggcccgt  
 ggagctggggccctgatgccgagacttggAACAGCCAGAAGGACCTCCTGGAGCAGAGGCGGGCCGA  
 GGGTGGAC

15 acctactgcagacacaactacgggTTGTGGAGAGCTTCACAGTCAGCGGCGAG (SEQ ID NO:4-4-2536) ;

DRB1\*040302 :

cacgtttcttggagcaggtaaaCatgagtgtcatttcttcaacgggacggagcgggtgcgggttcctggacagata  
 cttctatcaccaagaggagtcgtgcgcttcgacagcgacgtggggagttaccgggcccgt  
 20 cctgacgcTgagtacttggAACAGCCAGAAGGACCTCCTGGAGCAGAGGCGGGCCGA  
 ACAACTACGGGTTGTGGAGAGCTTCACAGTCAGCGGCGAG (SEQ ID NO:4-5-2537) ;

DRB1\*0404 :

atggtgtgtctgaagTtccctggaggctcctgcatggcagctctgacagtgcacactgtatggtgctgagctccccac  
 tggcttggctgggacacccgaccacgtttcttggagcaggtaaacatgagtgtcatttcttcaacgggacgg  
 25 gcgggtcggttcctggacagatacttctatcaccaagaggagtcgtgcgcttcgacagcgacgtggggagttac  
 cggcggtgacggagctggggccctgatgccgagacttggAACAGCCAGAAGGACCTCCTGGAGCAGAGGCGGG  
 CGCGGTGGACACCTACTGCAGACACAACACTACGGGTTGTGGAGAGCTTCACAGTCAGCGGCGAG (SEQ ID

**N0: 4-6-2538) ;**

**DRB1\*040501 :**

ggggacacccgaccacgtttcttggagcaggtaaaCAtgagtgtcatttcaacgggacggagcgggtgcgt  
 tcctggacagataacttctatCaccaagaggagtAcgtgcgcctcgacagcgacgtggggagttaccggcggtgac  
 5 ggagctggggcggcctaGcgccgagtactggAACAGCCAGAAGGACCTCCTGGAGCAGAGGCGGGCGCGTGGAC  
 acctactgcagacacaactacgggttggtgagagcttcacagtgcagcggcga (SEQ ID N0: 4-7-2539) ;

**DRB1\*040502 :**

cacgtttcttggagcaggtaaacatgagtgtcatttcaacgggacggagcgggtgcggttcctggacagata  
 cttctatcaccaagaggagtacgtgcgGttcgacagcgacgtggggagttaccggcggtgacggagctgggcgg  
 10 cctagcggcggacttggAACAGCCAGAAGGACCTCCTGGAGCAGAGGCGGGCGCGTGGACACCTACTGCAGAC  
 acaactacgggttggtgagagcttcacagtgcagcggcag (SEQ ID N0: 4-8-2540) ;

**DRB1\*040503 :**

cacgtttcttggagcaggtaaacatgagtgtcatttcaacgggacggagcgggtgcggttcctggacagata  
 cttctatcaccaagaggagtacgtgcgcctcgacagcgacgtggggagttaccggcggtgacggagctgggcgg  
 15 cctagcggcggacttggAACAGCCAGAAGGACCTCCTGGAGCAGAGGCGGGCGCGTGGACACCTACTGCAGAC  
 acaactacgggttggtgagagcttcacagtgcagcggcag (SEQ ID N0: 4-9-2541) ;

**DRB1\*040504 :**

cacgtttcttggagcaggtaaacatgagtgtcatttcaacgggacggagcgggtgcggttcctggacagata  
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 20 cctagGcccgagtactggAACAGCCAGAAGGACCTCCTGGAGCAGAGGCGGGCGCGTGGACACCTACTGCAGAC  
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**DRB1\*0406 :**

ggggacacccgaccacgtttcttggagcaggtaaaCAtgagtgtcatttcaacgggacggagcgggtgcgt  
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 25 ggagctggggcggcctgtgccgagtactggAACAGCCAGAAGGACCTCCTGGAGCAGAGGCGGGCGAGgtggac  
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2543) ;

DRB1\*040701 :

ggggacacccgaccacgttcttgagcaggtaaaCatgagtgtcattttcaacgggacggagcgggtgcgg  
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 gagctgggcccgtatgccgacttggaaacagccagaaggacccctggagcagaggcggccgAggtggac  
 5 acctactgcagacacaactacgggttggtgagagcttcacagtgcagcggcga (SEQ ID NO:5-2-2544) ;

DRB1\*040702 :

cacgttttcttgagcaggtaaacatgagtgtcattttcaacgggacggagcgggtgcggttcctggacagata  
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 ggtatgccgacttggaaacagccagaaggacccctggagcagaggcggccggtggacacctactgcagac  
 10 acaactacgggttggtgagagcttcacagtgcagcgg (SEQ ID NO:5-3-2545) ;

DRB1\*0408 :

tttcttgagcaggtaaaACAtgagtgtcattttcaacgggacggagcgggtgcgggttcctggacagataactt  
 tatCaccaagaggagtAcgtgcgcctcgacagcgacgtggggagtagccggcggtgacggagctgggccc  
 atgccgacttggaaacagccagaaggacccctggagcagaggcggccggtggacacctactgcagacaca  
 15 ctacgggttggtgagagcttcacagtgcagcggcag (SEQ ID NO:5-4-2546) ;

DRB1\*0409 :

tgagtgtcattttcaacgggacggagcgggtgcgggttcctggacagataacttcatCaccaagaggagtacgt  
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 agaaggacccctggagcagaAgcggccggtggacacctactgcagacacaactacgggttggtgagag (SE  
 20 Q ID NO:5-5-2547) ;

DRB1\*0410 :

tttcttgagcaggtaaacatgagtgtcattttcaacgggacggagcgggtgcgggttcctggacagataactt  
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 Gccgcgacttggaaacagccagaaggacccctggagcagaggcggccggtggacacctactgcagacaca  
 25 ctacgggttggtgagagcttcacagtgcagcggcag (SEQ ID NO:5-6-2548) ;

DRB1\*0411 :

atggtgtgtctgaagTtccctggaggctcctgcatggcagctgtacactgtatggtgctgactccccac

tggcttggctgggacacccgaccacgtttttggagcaggtaaacatgagtgtcatttcaacgggacgga  
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 cggcggtgacggagctgggcccctagccccgactactggAACAGCCAGAAGGACCTCTGGAGCAGAGGCGGG  
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 5 NO: 5-7-2549) ;

DRB1\*0412 :

ttcttgaggcaggtaaacatgagtgtcatttcaacgggacggagcggtgcgggtcctggacagatacttct  
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 cggcggactactggAACAGCCAGAAGGACAtcctggAAAGACAGGCGGGCCC Tggtggacacctactgcagacacaac  
 10 tacgggttgtGagagcttcacagtgcagcgg (SEQ ID NO: 5-8-2550) ;

DRB1\*0413 :

catgagtgcatttcaacgggacggagcggtgcgggtcctggacagatacttctatCaccaagaggagtagc  
 tgcgcctcgacagcgacgtggggagtagccggcgtgacggagctgggcccctgatgccgagactggAACAG  
 ccagaaggacctctggagcagaAgcggccgcgtggacacctactgcagacacaactacgggtgtGagagc  
 15 ttcaca (SEQ ID NO: 5-9-2551) ;

DRB1\*0414 :

tgagtgtcatttcaacgggacggagcggtgcgggtcctggacagatacttctatCaccaagaggagtagtgc  
 cgcttcgacagcgacgtggggagtagccggcgtgacggagctgggcccctgatgccgagactggAACAG  
 agaaggacAtcctggAAAGACAGGCGGGCCC Tggtggacacctactgcagacacaactacgggtgtgagag (SE  
 20 Q ID NO: 6-0-2552) ;

DRB1\*0415 :

cacgtttggaggcaggtaaaCatgagtgtcatttcaacgggacggagcggtgcgggtcctggacagata  
 ctctatcaccaagaggagtagtgcgcctcgacagcgacgtggggagtagccggcgtgacggagctgggccc  
 cctgatgaGagactggAACAGCCAGAAGGACAtcctggAAAGACAGGCGGGCCC Tggtggacacctactgcagac  
 25 acaactacgggttgtGagag (SEQ ID NO: 6-1-2553) ;

DRB1\*0416 :

atgagtgtcatttcaacgggacggagcggtgcgggtcctggacagatacttctatcaccaagaggagtagtgc

ggcgttcgacagcgcacgtggggagtaccggcggtgacggagctgggcggcctgatgccCagtactgaaacagc  
 cagaaggacacctggagcagaagcggccgcggtgacacctactgcagacacaactacggggttgg (SEQ  
 ID NO:~~-6-22554~~) ;

DRB1\*0417 :

5 atgagtgtcatttcttcaacggacggagcgggtcggttcctggacagatacttctatCaccaagaggagtagt  
 ggcgttcgacagcgcacgtggggagtaccggcggtgacggagctgggcggcctaGgcgcgactgaaacagc  
 cagaaggacacctggagcagaggcggccgAggtggacacctactgcagacacaactacggggttgg (SEQ ID  
 NO:~~-6-3-2555~~) ;

DRB1\*0418 :

10 atgagtgtcatttcttcaacggacggagcggagcgggtcggttcctggacagatacttctatCaccaagaggagtagt  
 ggcgttcgacagcgcacgtggggagtaccggcggtgacggagctgggcggcctaGgcgcgactgaaacagc  
 cagaaggacAtcctggaagacaggcggcccTggtgacacctactgcagacacaactacggggttgg (Gagagct  
 tcacagtgc (SEQ ID NO:~~-6-4-2556~~) ;

DRB1\*0419 :

15 tttcttgagcaggtaaACAtgagtgtcatttcttcaacggacggagcgggtcggttcctggacagatactt  
 tatCaccaagaggagtcgtgcgttcgcacagcgcacgtggggagtaccggcggtgacggagctgggcggccta  
 atgcgcgactggaacagccagaaggacacctggagcagaggcggccgcggtgacacctactgcagacaca  
 ctacggggttggtgagagcttcacagtgcagcggc (SEQ ID NO:~~-6-5-2557~~) ;

DRB1\*0420 :

20 atgagtgtcatttcttcaacggacggagcggagcgggtcggttcctggacagatacttctatCaccaagaggagtcgt  
 ggcgttcgacagcgcacgtggggagtaccggcggtgacggagctgggcggcctaGgcgcgactgaaacagc  
 cagaaggacacctggagcagaggcggccgAggtggacacctactgcagacacaactacggggttgg (SEQ  
 ID NO:~~-6-6-2558~~) ;

DRB1\*0421 :

25 gagcaggtaaacatgagtgtcatttcttcaacggacggagcggagcgggtcggttcctggacagatacttctatCacc  
 aagaggagtcgtgcgttcgcacagcgcacgtggggagtaccggcggtgacggagctgggcggcctaGgcgc  
 gactggaacagccagaaggacacctggagcagaAgcggccgcggtgacacctactgcagacacaactacggg

gttgtgagagcttcacagt (SEQ ID NO: 6-7-2559) ;

DRB1\*0422 :

gagcaggtaaacatgagtgcattttcaacggacggagcggtgcgggtccctggacagatacttctatCacc  
aagaggagtAcgtcgccttcgacagcgacgtggggagttaccggcggtgacggagctgggcggcctgtgccga  
5 gtaacttggAACAGCCAGAAAGGACCTCCTGGAGCAGAAGCGGGCCGgtggacaActactgcagacacaactacggg  
gttgtGgagagcttcaca (SEQ ID NO: 6-8-2560) ;

DRB1\*0423 :

cacgtttcttggagcaggtaaacatgagtgcattttcaacggacggagcggtgcgggtccctggacagata  
cttctatcaccaagaggagtacgtgcgccttcgacagcgacgtggggagttaccggcggtgacggagctgggcgg  
10 cctgatgccgagttacttggAACAGCCAGAAAGGACCTCCTGGAGCAGAAGCGGGCCGgtggacacctactgcagac  
acaactacgggttgagagAttcacagtgcagcggcgg (SEQ ID NO: 6-9-2561) ;

DRB1\*0424 :

cacgtttcttggagcaggtaaacatgagtgcattttcaacggacggagcggtgcgggtccctggacagata  
cttctatcaccaagaggagtacgtgcgccttcgacagcgacgtggggagttaccggcggtgacggagctgggcgg  
15 cctaG0gccgagttacttggAACAGCCAGAAAGGACCTCCTGGAGCAGAAGCGGGCCGgtggacacctactgcagac  
acaactacgggttggtgagagcttcacagtgcagcggcgg (SEQ ID NO: 7-0-2562) ;

DRB1\*0425 :

ttggagcaggtaaacatgagtgcattttcaacggacggagcggtgcgggtccctggacagatacttctatC  
accaagaggagtAcgtcgccttcgacagcgacgtggggagttaccggcggtgacggagctgggcggcctgtgc  
20 cgagacttggAACAGCCAGAAAGGACCTCCTGGAGCAGAAGCGGGCCGgtggacacctactgcagacacaactac  
gggttggtGgagag (SEQ ID NO: 7-1-2563) ;

DRB1\*0426 :

cacgtttcttggagcaggtaaacatgagtgcattttcaacggacggagcggtgcgggtccctggacagata  
cttctatcaccaagaggagtacgtgcgccttcgacagcgacgtggggagttaccggcggtgacggagctgggcgg  
25 cctgatAccgagttacttggAACAGCCAGAAAGGACCTCCTGGAGCAGAAGCGGGCCGgtggacacctactgcagac  
acaactacgggttggt (SEQ ID NO: 7-2-2564) ;

DRB1\*0427 :

cacgtttcttggagcaggtaaacatgagtgtcatttcaacgggacggagcgggtgcggttctggacagata  
 cttctatcaccaagaggagtAcgtgcgcttcgacagcgacgtggggagtaccggccgtgacggagctgggcgg  
 cctgatgccgagactggaacagccagaaggacccctggagcagaggcggccgAggtggacacctactgcagac  
 acaactacggggCtgtggagagottcacagt (SEQ ID NO:~~7-3-2565~~) ;

5 DRB1\*0428 :

cacgtttcttggagcaggtaaacatgagtgtcatttcaacgggacggagcgggtgcggttctggacagata  
 cttctatcaccaagaggagtAcgtgcgcttcgacagcgacgtggggagtTccggccgtgacggagctgggcgg  
 cctaGcgccgagactggaacagccagaaggacccctggagcagaggcggccgcccgtggacacctactgcagac  
 acaactacggggttgtgagagottcacagtgcagccg (SEQ ID NO:~~7-4-2566~~) ;

10 DRB1\*0429 :

cacgtttcttggagcaggtaaacatgagtgtcatttcaacgggacggagcgggtgcggttctggacagata  
 cttctatcaccaagaggagtacgtgcgcttcgacagcgacgtggggagtaccggccgtgacggagctgggcgg  
 cctagcgccgagactggaacagccagaaggacccctggagcagaggcggccgcccgtggacacctactgcagac  
 acaactacggggttgtgagagottcacagtgcagccg (SEQ ID NO:~~7-5-2567~~) ;

15 DRB1\*0430 :

cacgtttcttggagcaggtaaacatgagtgtcatttcaacgggacggagcgggtgcggttctggacagata  
 cttctatcaccaagaggagtacgtgcgcttcgacagcgacgtggggagtaccgggTggagctgggcgg  
 cctagcgccgagactggaacagccagaaggacccctggagcagaggcggccgcccgtggacacctactgcagac  
 acaactacggggttgtgagagottcacagtgcagccg (SEQ ID NO:~~7-6-2568~~) ;

20 DRB1\*0431 :

cacgtttcttggagcaggtaaaCatgagtgtcatttcaacgggacggagcgggtgcggttctggacagata  
 cttctatcaccaagaggagtAcgtgcgcttcgacagcgacgtggggagtaccggccgtgacggagctgggcgg  
 cctgatgccgagactggaacagccagaaggacccctggagcagaggcggccCTggtgacacctactgcagac  
 acaactacggggttgtgagagottcacagtgcagccg (SEQ ID NO:~~7-7-2569~~) ;

25 DRB1\*0432 :

ttggagcaggtaaacatgagtgtcatttcaacgggacggagcgggtgcggttctggacagatacttctatc  
 accaagaggagtacgtgcgcttcgacagcgacgtggggagtaccggccgtgacggagctggggccctgatgc

cgagttactggAACAGGCCAGAAGGACCTCCTGGAGCAGAGGCAGGCCGCGGTGGACACCTACTGCAGACACAAC  
gggttggag (SEQ ID NO: 7-8-2570) ;

DRB1\*0433 :

5 cacgtttcttggAGCAGGTTAAACATGAGTGTCAATTCTCAACGGGACGGAGCGGGTGCAGGTTCTGGACAGATA  
ccttatcaccaAGAGGAGTACGTGCACTCGACAGCGACGTGGGGAGTACCGGGCGGTGACGGAGCTGGGCGG  
cctgatgccgAGTACTGGAACAGCCAGAAGGACCTCCTGGAGCAGAAGCGGGCCGCGGTGGACACCTACTGCAGAC  
acaactacgggttggtagAGAGCAGTCACAGTGCAAGCGGAG (SEQ ID NO: 7-9-2571) ;

DRB1\*0434 :

10 tttcttggAGCAGGTTAAACATGAGTGTCAATTCTCAACGGGACGGAGCGGGTGCAGGTTCTGGACAGATACTTC  
tatcaccaAGAGGAGTACGTGCGCTTCGACAGCGACGTGGGGAGTACCGGGCGGTGACGGAGCTGGGCGGCTG  
atGCCGAGTACTGGAACAGCCAGAAGGACCTCCTGGAGCAGAAGCGGGCCGCGGTGGACACCTACTGCAGACACAA  
ctacgggttggta (SEQ ID NO: 8-0-2572) ;

DRB1\*0435 :

15 cacgtttcttggAGCAGGTTAAACATGAGTGTCAATTCTCAACGGGACGGAGCGGGTGCAGGTTCTGGACAGATA  
cttatcaccaAGAGGAGTACGTGCGCTTCGACAGCGACGTGGGGAGTACCGGGCGGTGACGGAGCTGGGCGG  
cctgatgccgAGTACTGGAACAGCCAGAAGGACCTCCTGGAGCAGAAGCGGGCCGCGGTGGACACCTACTGCAGAC  
acaactacgggttggtagAGAGCAGTCACAGTG (SEQ ID NO: 8-1-2573) ;

DRB1\*0436 :

20 cacgtttcttggAGCAGGTTAAACATGAGTGTCAATTCTCAACGGGACGGAGCGGGTGCAGGTTCTGGACAGATA  
cttatcaccaAGAGGAGTACGTGCGCTTCGACAGCGACGTGGGGAGTACCGGGCGGTGACGGAGCTGGGCGG  
cctgatgccgAGTACTGGAACAGCCAGAAGGACCTCCTGGAGAAGAAGCGGGCCGCGGTGGACACCTACTGCAGAC  
acaactacgggttggtagAGAGCAGTCACAGTGCAAGCGGAG (SEQ ID NO: 8-2-2574) ;

DRB1\*0437 :

25 cacgtttcttggAGCAGGTTAAACATGAGTGTCAATTCTCAACGGGACGGAGCGGGTGCAGGTTCTGGACAGATA  
cttatcaccaAGAGGAGTACGTGCGCTTCGACAGCGACGTGGGGAGTACCGGGCGGTGACGGAGCTGGGCGG  
cctgatgccgAGTACTGGAACAGCCAGAAGGACCTCCTGGAGAAGACAGCGGGCCGCGGTGGACACCTACTGCAGAC  
acaactacgggttggtagAGAGCAGTCACAGTGCAAGCGGAG (SEQ ID NO: 8-3-2575) ;

DRB1\*0438 :

cacgtttcttggagcaggtaaaCatgagtgtcatttcaacgggacggagcgggtgcggttcgtggacagata  
 ctttatcaccaagaggagtacgtgcgcattcgacagcgacgtggggagtagccggcggtgacggagctggggcgg  
 cctgatgccgagtaactggaacagccagaaggacAtcctggagcagaAgcggccgcggtgacacctactgcagac  
 5 acaactacgggttggtagagagottcacagtgcagcggcag (SEQ ID NO: 8-42576) ;

DRB1\*0439 :

cacgtttcttggagcaggtaaacatgagtgtcatttcaacgggacggagcgggtgcggttcgtggacagata  
 ctttatcaccaagaggagtacgtgcgcattcgacagcgacgtggggataccggcggtgacggagctggggcgg  
 cctgatgccgagtaactggaacagccagaaggacccctggagcagaggcggccgaggtggacacctactgcagac  
 10 acaactacgggttggagagottcacagtgcagcgg (SEQ ID NO: 8-52577) ;

DRB1\*0440 :

cacgtttcttggagcaggtaaacatgagtgtcatttcaacgggacggagcgggtgcggttcgtggacagata  
 ctttatcaccaagaggagtacgtgcgcattcgacagcgacgtggggagtagccggcggtgacggagctggggcgg  
 cctgatgcgagtaactggaacagccagaaggacccctggagcagaggcggccgaggtggacacctactgcagac  
 15 acaactacgggttggagagottcacagtgcagcgg (SEQ ID NO: 8-62578) ;

DRB1\*0441 :

cacgtttcttggagcaggtaaaCatgagtgtcatttcaacgggacggagcgggtgcggttcgtggacagata  
 ctttatcaccaagaggaggAAcgtgcgcattcgacagcgacgtggggagtagccggcggtgacggagctggggcgg  
 cctgatgccgagtaactggaacagccagaaggacccctggagcagaggcggccgAggtggacacctactgcagac  
 20 acaactacgggttggagagottcacagtgcagcgg (SEQ ID NO: 8-72579) ;

DRB1\*0442 :

cacgtttcttggagcaggtaaaCatgagtgtcatttcaacgggacggagcgggtgcggttcgtggacagata  
 ctttatcaccaagaggagtacgtgcgcattcgacagcgacgtggggatTccggcggtgacggagctggggcgg  
 cctgatgccgagtaactggaacagccagaaggacccctggagcagaggcggccgaggtggacacctactgcagac  
 25 acaactacgggttggagagottcacagtgcagcggcag (SEQ ID NO: 8-82580) ;

DRB1\*0443 ;

cacgtttcttggagcaggtaaaCatgagtgtcatttcaacgggacggagcgggtgcggttcgtggacagata

cttctatCaccaagaggagtacgtgcgcttcgacagcgacgtggggagtTccggggcgtgacggagctggggcgg  
 cctgatgccgagttactgaaacagccagaaggacccctggagcagaggcggccgcggtgacacctactgcagac  
 acaactacggggttggtagagagcttcacagtgcagcgg (SEQ ID NO:~~8-9-2581~~) ;

DRB1\*0444 :

5 cacgtttcttggagcaggtaaacatgagtgtcatttcttcaacgggacggagcgggtgcggttctggacagata  
 cttctatCaccaagaggagtAcgtgcgcttcgacagcgacgtggggagtaccgggcgtgacggagctgggcgg  
 cctgatgccgagttactgaaacagccagaaggacccctggagcagaggcggccgcggtgacacaaTactgcagac  
 acaactacggggttggtagagagcttcacagtgcagc (SEQ ID NO:~~9-0-2582~~) ;

DRB1\*070101 :

10 atggtgtgtctgaagctccctggaggctcctgcatggcagctctgacagtgacactgtatggtgctgagctccccac  
 tggcttggctgggacacccAaccacgttccctgtggcaggtaagtataagtgtcatttcttcaacgggacgga  
 gcgggtgcagttcctggaaagactcttctataaccaggaggagttcgtgcgcttcgacagcgacgtggggagttac  
 cgggcggtgacggagctaggcggccctgtcggcagtcctggaaacagccagaaggacatcctggaggacaggcgg  
 gcaCaggtggacaccgtGtgcagacacaactacggggttggtagagagcttcacagtgcagcggc (SEQ ID  
 15 NO:~~9-1-2583~~) ;

DRB1\*070102 :

cacgtttcctgtggcaggtaaAtataagtgtcatttcttcaacgggacggagcgggtgcagttcctggaaagact  
 cttctataaccaggaggagttcgtgcgcttcgacagcgacgtggggagttaccgggcgtgacggagctAgggcgg  
 cctgtcggcagttcctggaaacagccagaaggacatcctggaggacaggcggccagggtggacaccgtGtgcagac  
 20 acaactacggggttggtag (SEQ ID NO:~~9-2-2584~~) ;

DRB1\*0703 :

cacgtttcctgtggcaggtaagtataagtgtcatttcttcaacgggacggagcgggtgcagttcctggaaagTct  
 cttctataaccaggaggagttcgtgcgcttcgacagcgacgtggggagttaccgggcgtgacggagctaggcgg  
 cctgtcggcagttcctggaaacagccagaaggacatcctggaggacaggcggccagggtggacaccgtgtcagac  
 25 acaactacggggttggtag (SEQ ID NO:~~9-3-2585~~) ;

DRB1\*0704 :

tttcctgtggcaggtaagtataagtgtcatttcttcaacgggacggagcgggtgcagttcctggaaagactcttc

tataaccaggaggagttcgtgcgcttcgacagcgacgtggggagtagccggcggtgacggagctAgggcggcctg  
 tcgcccggatcctggaacagccagaaggacatcctggaggacaggcggggccaggtggacaaTtactgcagacacaa  
 ctacggggtttgtgagagc (SEQ ID NO:9-4-2586) ;

DRB1\*0705 :

5 cacgtttcctgtggcaggtaagtataagtgtcatttcttcaacgggacggagcgggtgcagttcctggaaagact  
 cttctataaccaggaggagttcgtgcgcttcgacagcgacgtggggagtagccggcggtgacggagctagggcgg  
 cctgtcgccgagtccctggaacagccGgaaggacatcctggaggacaggcggggccaggtggacaccgtgtcagac  
 acaactacggggtttgtgagagc (SEQ ID NO:9-5-2587) ;

DRB1\*0706 :

10 cacgtttcctgtggcaggtaagtataagtgtcatttcttcaacgggacggagcgggtgcagttcctggaaagact  
 cttctataaccaggaggagttcgtgcgcttcgacagcgacgtggggagtagccggcggtgacggagctAggcgg  
 cctgctgcGgagtaactggaacagccagaaggacatcctggaggacaggcggggccaggtggacaccgtGtgcagac  
 acaactacggggtttgtgagagc (SEQ ID NO:9-6-2588) ;

DRB1\*0707 :

15 cacgtttcctgtggcaggtaagtataagtgtcatttcttcaacgggacggagcgggtgcagttcctggaaagact  
 cttctataaccaggaggagttcgtgcgcttcgacagcgacgtggggagtagccggcggtgacggagctagggTgg  
 cctgtcgccgagtccctggaacagccagaaggacatcctggaggacaggcggggccaggtggacaccgtgtcagac  
 acaactacggggtttgtgagagc (SEQ ID NO:9-7-2589) ;

DRB1\*080101 :

20 gggcacacccgaccacgtttcttggagtagtctacgggtgagtgtTatttcttcaatgggacggagcgggtgcgg  
 tcctggacagatacttctataaccaagaggagtagtgcgccttcgacagcgacgtggggagtagccggcggtgac  
 ggagctggggcggctagCgcccggatctggaaacagccagaaggacTtcctggaaagacaggcggggccTggggac  
 acctactgcagacacaactacggggtttgtgagagc (SEQ ID NO:9-8-2590) ;

25 DRB1\*080102 :

cacgtttcttggagtagtctacgggtgagtgttatttcttcaatgggacggagcgggtgcgggtccctggacagata  
 Tttctataaccaagaggagtagtgcgccttcgacagcgacgtggggagtagccggcggtgacggagctggggcgg

cctagccccgacttggaaacaggccagaaggacttctggaaagacaggccccctggacacctactgcagac  
 acaactacgggttggtgagagcttcacggcgcag (SEQ ID NO: ~~9-9~~2591) ;

DRB1\*080201 :

atggtgtgtctgaggctccctggaggctcctgcatggcagTtctgacagtgcacactgtggctgagctccccac  
 5 tggcttggctgggacaccagaccacgtttctggagttactctacgggtgagtgttatttcttcaatgggacgga  
 gcggtgcggttcctggacagatacttctataaccaagaggagtacgtcgcctcgacagcgcacgtggggagttac  
 cggcggtacggagctggggccctgatgccgagttactggaaacagccagaaggacttcctggaaagacaggcgg  
 ccctggtgacacacttcacgtcagacacaactacgggttggtgagagcttcacGgtgcagcggcgcag (SEQ ID  
 NO: ~~1-0~~02592) ;

10 DRB1\*080202 :

cacgttcttggagttactctacgggtgagtgtTatttcttcaatgggacggagcgggtgcggttctggacagata  
 ctctataaccaagaggagtacgtcgcctcgacagcgcacgtggggagttaccggccgtgacggagctggggcgg  
 cctgatgccgagttactggaaacagccagaaggacTtcctggaaagacaggcccccTggtgacacctactgcagac  
 acaactacgggttggtgagagcttcacagtgcagcggcgcag (SEQ ID NO: ~~1-0~~12593) ;

15 DRB1\*080203 :

cgttcttggagttactctacgggtgagtgttatttcttcaatgggacggagcgggtgcggttctggacagataact  
 tctataaccaagaggagtacgtcgcctcgacagcgcacgtggggagttaccggccgtgacAgagctggggcggcc  
 tgatgccgagttactggaaacagccagaaggacttcctggaaagacaggcccccTggtgacacctactgcagacac  
 aactacgggttggtgagagcttcacggtg (SEQ ID NO: ~~1-0~~22594) ;

20 DRB1\*080302 :

ggggacaccagaccacgtttcttggagttactctaCgggtgagtgtTatttcttcaatgggacggagcgggtgcgg  
 tcctggacagataacttctataaccaagaggagtacgtcgcctcgacagcgcacgtggggagttaccggccgtgac  
 ggagctggggccctaGccgcgacttggaaacagccagaaggacAtcctggaaagacaggcccccTggtgac  
 acctactgcagacacaactacgggttggtgagagcttcacagtgcagcggcgcag (SEQ ID NO: ~~1-0~~3

25 2595) ;

DRB1\*080401 :

ggggacaccagaccacgtttcttggagttactctacgggtgagtgtTatttcttcaatgggacggagcgggtgcgg

tcctggacagataacttctataaccaagaggagtAcgtdgcgttcgacagcgacgtggggagtagccggcggtgac  
 ggagctggggcggcctgatgccgagttactggaacagccagaaggacTtcctgaaagacaggcggcccTggtgac  
 acctactgcagacacaactacgggttgtGagagcttcacagtgcagcggcag (SEQ ID NO:~~104~~  
2596) ;

5 DRB1\*080402 :

ttcaatggacggagcgggtgcggttcctggacagataacttctataaccaagaggagtAcgtdgcgttcgacagcg  
 acgtggggagtagccggcgtgacggagctggggcggcctgatgccgagttactggaacagccagaaggacTtcct  
 ggaagacaggcggcccTggtgacacactgcagacacaactacgggttgTtgagagcttcacagtgcagcgg  
 (SEQ ID NO:~~105~~2597) ;

10 DRB1\*080403 :

cacgtttcttggagttactctacgggtgagtgttatttcttaatgggacggagcgggtgcggttcctggacagata  
 ctctataaccaagaggagtacgtgcgttcgacagcgacgtggggagtagccggcgtgacggagctggcgg  
 cctgatgccgagttactggaacagccagaaggacttcctgaaagacaggcggcccTggtgacacactgcagac  
 acaactacgggttgTtgagagcttcacGgtgcagcggcga (SEQ ID NO:~~106~~2598) ;

15 DRB1\*080404 :

cacgtttcttggagttactctacgggtgagtgttatttcttaatgggacggagcgggtgcgggtcctggacagata  
 ctctataaccaagaggagtacgtgcgttcgacagcgacgtggggagtagccggcgtgacggagctggcgg  
 cctgatgccgagttactggaacagccagaaggacttcctgaaagacaggcggcccTggtgacacactgcagac  
 acaactacgggttgGagagcttcacGgtgcagcggcag (SEQ ID NO:~~107~~2599) ;

20 DRB1\*0805 :

cacgtttcttggagttactctacgggtgagtgttatttcttaatgggacggagcgggtgcgggtcctggacagata  
 ctctataaccaagaggagtacgtgcgttcgacagcgacgtggggagtagccggcgtgacggagctggcgg  
 cctaGccgcgagttactggaacagccagaaggacTtcctgaaagaCaggcggccgcggtgacacactgcagac  
 acaactacgggttg (SEQ ID NO:~~108~~2600) ;

25 DRB1\*0806 :

ccacgtttcttggagttactctacgggtgagtgttatttcttaatgggacggagcgggtgcgggtcctggacagat  
 actctataaccaagaggagtacgtgcgttcgacagcgacgtggggagtagccggcgtgacggagctggcgg

gcctaGcgccgagtaactggAACAGCCAGAAGGAC TtccttggAAAGACAGGCGGGCCC TggggacaccTactgcaga  
 cacaactacgggttgtGgagagttcacagtgcagcggcag (SEQ ID NO:10-9-2601) ;  
 DRB1\*0807 :  
 cacgtttcttggagtaactctacgggtgagtgttatttcttcaatggacggagcgggtgcggttcctggacagata  
 5 cttctataaccaagaggagtaacgtgcgcttcgacacgcacgtggggagtaccgggcggtgacggagctggggcgg  
 cctgTtgcggagtaactggAACAGCCAGAAGGAC TtccttggAAAGACAGGCGGGCCC TggggacaccTactgcaga  
 acaactacgggttgtgagagttcacGgtgcagcggcag (SEQ ID NO:11-0-2602) ;  
 DRB1\*0808 :  
 ttggagtaactctacgggtgagtgttatttcttcaatggacggagcgggtgcggttcctggacagataacttctata  
 10 accaagaggagtaacgtgcgcttcgacacgcacgtggggagtaccgggcggtgacggagctggggcggctgCtgc  
 ggagCactggAACAGCCAGAAGGACTTccttggAAAGACAGGCGGGCCC TggggacaccTactgcagacacaactac  
 ggggttgtgag (SEQ ID NO:11-1-2603) ;  
 DRB1\*0809 :  
 cacgtttcttggagtaactctaGgggtgagtgttatttcttcaatggacggagcgggtgcggttcctggacagata  
 15 cttccataaccaggaggagtTcgtgcgcttcgacacgcacgtggggagtaccgggcggtgacggagctggggcgg  
 cctgatgccggagtaactggAACAGCCAGAAGGAC TtccttggAAAGACAGGCGGGCCC TggggacaccTactgcaga  
 acaactacgggttgtgagagttcacGgtgcagcggcag (SEQ ID NO:11-2-2604) ;  
 DRB1\*0810 :  
 cacgtttcttggagtaactctacgggtgagtgttatttcttcaatggacggagcgggtgcggttcctggacagata  
 20 cttctataaccaagaggagtaacgtgcgcttcgacacgcacgtggggagtaccgggcggtgacggagctggggcgg  
 cctGcgccgagtaactggAACAGCCAGAAGGAC TtccttggAAAGACAGGCGGGCCC TggggacaccTactgcaga  
 acaactacgggttgtGgagagttcacagtgcagcggcag (SEQ ID NO:11-3-2605) ;  
 DRB1\*0811 :  
 cacgtttcttggagtaactctacgggtgagtgttatttcttcaatggacggagcgggtgcggttcctggacagata  
 25 cttctataaccaagaggagtaacgtgcgcttcgacacgcacgtggggagtaccgggcggtgacggagctggggcgg  
 cctgCtgcggagtaactggAACAGCCAGAAGGACTTccttggAAAGACAGGCGGGCCC TggggacaccTactgcaga  
 acaactacgggttgtgagagttcacGgtg (SEQ ID NO:11-4-2606) ;

DRB1\*0812 :

cacgtttcttggagactctacgggtgagtgttatttcttcaatgggacggagcgggtgcggttcgtggacagata  
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 cctagcgcgagactggaacagccagaaggacAtcctggaagacaggcggcccTggtgacacctactgcagac  
 5 acaactacggggCtgtggagagottcacagtgcagcggcag (SEQ ID NO:1 1 5 2607) ;

DRB1\*0813 :

tcttggagactctacgggtgagtgtTatttcttcaatgggacggagcgggtgcggttcgtggacagatacttc  
 taaccaagaggagtAcgtgcgcctcgacagcgacgtggggagtaaccggccgtgacggagctggggcggcctgat  
 gccgagactggaacagccagaaggacctctggaagacaggcggcccTggtgacacctactgcagacacaact  
 10 acggggttggtgagagottcacGgtg (SEQ ID NO: 1 1 6 2608) ;

DRB1\*0814 :

cacgtttcttggagactctaGgggtgagtgttatttcttcaatgggacggagcgggtgcggttcgtggacagata  
 cttctataaccaagaggagtacgtgcgcctcgacagcgacgtggggagtaaccggccgtgacggagctggggcgg  
 cctagcgcgagactggaacagccagaaggacatcctggaagacaggcggcccctggtgacacctactgcagac  
 15 acaactacggggttggtgagagottcacagt (SEQ ID NO:1 1 7 2609) ;

DRB1\*0815 :

tttcttggagactctacgggtgagtgttatttcttcaatgggacggagcgggtgcggttcgtggacagataacttc  
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 atgcggagCactggaacagccagaaggacAtcctggaagacaggcggcccTggtgacacctactgcagacaca  
 20 ctacggggttggtg (SEQ ID NO:1 1 8 2610) ;

DRB1\*0816 :

cacgtttcttggagactctacgggtgagtgttatttcttcaatgggacggagcgggtgcggttcgtggacagata  
 cttctataaccaagaggagGacgtgcgcctcgacagcgacgtggggagtaaccggccgtgacggagctggggcgg  
 cctagcgcgagactggaacagccagaaggacttcctggaagacaggcggcccctggtgacacctactgcagac  
 25 acaactacggggttggtgagagottcacGgtgcagcggcag (SEQ ID NO:1 1 9 2611) ;

DRB1\*0817 :

cacgtttcttggagactctacgggtgagtgttatttcttcaatgggacggagcgggtgcggttcgtggacagata

cttctataaccaagaggagtacgtgcgcttcgacagcgacgtggggagtTccggccgtgacggagctggggcgg  
 cctaGcgccgagactggaacagccagaaggacTtcctggaagacaggcgggcccTggtgacacctactgcagac  
 acaactacggggttgtg (SEQ ID NO:~~1-2-0~~202612) ;

DRB1\*0818 :

5 cacgtttcttggagtactctaCgggtgagtgtTatttcttcaatgggacggagcgggtgcggttcctggacagata  
 cttctataaccaagaggagtacgtgcgcttcgacagcgacgtggggagtaccggccgtgacggagctggggcgg  
 cctaGcgccgagactggaacagccagaaggacAtcctggaagaCaggcggccgcgtggacacctactgcagac  
 acaactacggggttgtgtagagcttcacagtgcagcggcag (SEQ ID NO:~~1-2-1~~2613) ;

DRB1\*0819 :

10 tttcttggagtactctacgggtgagtgttatttcttcaatgggacggagcgggtgcggttcctggacagataacttc  
 tataaccaagaggagtacgtgcgcttcgacagcgacgtggggagtaccggccgtgacggagctggggcccta  
 TcgccgagactggaacagccagaaggacAtcctggaagacaggcgggcccTggtgacacctactgcagacacaa  
 ctacggggttgtgagagcttcacagtgc (SEQ ID NO:~~1-2-2~~2614) ;

DRB1\*0820 :

15 cacgtttcttggagtactctacgtCtgagtgtcatttcttcaatgggacggagcgggtgcggttcctggacagata  
 cttctataaccaagaggagtAcgtgcgcttcgacagcgacgtggggagtaccggccgtgacggagctggggcgg  
 cctgatgccgagactggaacagccagaaggacTtcctggaagacaggcgggcccTggtgacacctactgcagac  
 acaactacggggttgtGagagcttcacagtgcagcggcga (SEQ ID NO:~~1-2-3~~2615) ;

DRB1\*0821 :

20 cacgtttcttggagtactctaTgggtgagtgttatttcttcaatgggacggagcgggtgcggttcctggacagata  
 ctccataaccaggaggagttcgtgcgcttcgacagcgacgtggggagtaccggccgtgacggagctggggcgg  
 cctgatgccgagactggaacagccagaaggacttcctggaagacaggcgggcccctggacacctactgcagac  
 acaactacggggttgtgagagcttcacggtgcaagcggcga (SEQ ID NO:~~1-2-4~~2616) ;

DRB1\*0822 :

25 cacgtttcttggagtactctacgggtgagtgttatttcttcaatgggacggagcgggtgcggttcctggacagata  
 cttctataaccaagaggagtacgtgcgcttcgacagcgacgtggggagtaccggccgtgacggagctggggcgg  
 cctagcgccgagactggaacagccagaaggacttcctggaagacaggcgggcccctggacacctactgcagac

acaactacggggCtgtGgagagttcacGgtgcagcggcgag (SEQ ID NO:1-2-5-2617) ;

DRB1\*0823 :

cacgtttcttggagtactctacgggtgagtgttattttcaatgggacggagcgggtgcggttcctggacagata  
cttctataaccaagaggagtacgtgcgcttcgacacgcgacgtgAgggagtaccggccgtgacggagctggggcgg

5 ccttagcccgagtaactggaacacgccagaaggacatcctggaagacaggcccccTggtgacacctactgcagac  
acaactacggggttggtgagagottcacagtgcagcggcgag (SEQ ID NO:1-2-6-2618) ;

DRB1\*0824 :

cacgtttcttggagtactctacgggtgagtgttattttcaatgggacggagcgggtgcggttcctggacagata  
cttctataaccaagaggagtAcgtgcgcttcgacacgcgacgtggggagtaccggccgtgacggagctggggcgg

10 cctgatgccgagtaactggaacacgccagaaggacTtcctggaagaCaggccggccgcgtggacacctactgcagac  
acaactacggggttggtgagagottcacagtgcagcgg (SEQ ID NO:1-2-7-2619) ;

DRB1\*090102 :

ggggacacccaaccacgtttcttgaagcaggataagttgagtgtcattttcaacgggacggagcgggtgcgg  
atctgcacagaggcatctataaccaagaggagaacgtgcgcttcgacacgcgacgtggggagtaccggccgtgac

15 ggagctgggccgtgcggcgtCctggaacagccagaaggacttcctggagcggaggccggcggaggtggac  
accgtgtgcagacacaactacggggttggtgagagottcacagtgcagAggcgag (SEQ ID NO:1-2-8-  
2620) ;

DRB1\*0902 :

cacgtttcttgaagcaggataagttgagtgtcattttcaacgggacggagcgggtgcggtatctgcacagagg

20 catctataaccaagaggagaacgtgcgcttcgacacgcgacgtggggagtaccggccgtgacggagctggggcgg  
cctgacgcTgagtaactggaacagccagaaggacttcctggagcggaggccggcggaggtggacaccgtgtcagac  
acaactacggggttggtgagagottcacagtgcagAggcgag (SEQ ID NO:1-2-9-2621) ;

DRB1\*100101 :

atggtgtgtctgaggctccctggaggctcctgcatggcagttctgacagtgcacactgatggtgctgagctccccac

25 tggctttggctgggacaccagaccacgtttcttgaggaggttaagttgagtgtcattttcaacgggacgga  
gcgggtgcgggtgcggaaagacgcgtccataaccaagaggagtaacgcgcgtacgcacagcgtggggagttac  
cgggcgggtacggagctggggccctgatgccgagtaactggaacagccagaaggacccctggagcggaggcgtg

ccgcgggtggacacctactgcagacacaactacggggttgtgagagcttcacagtgcagcggcgag (SEQ ID  
 NO:1-3-0-2622) ;

DRB1\*100102 :

cacgtttcttggaggaggtaagttgagtgtcatttcaacggacggagcgggtgcggttctggaaagacg  
 5 cGtccataaccaagaggagtacgcgcgctacgacagcgacgtggggagttaccggcggtgacggagctgggccc  
 cctgatgccgagtaactggaacagccagaaggacccctggagcggaggcgCgcccgggtggacacctactgcagac  
 acaactacggggttgtgagagcttcacagtgcagcggcgag (SEQ ID NO:1-3-1-2623) ;

DRB1\*110101 :

atggtgtgtctgaggctccctggaggctcctgcatggcagTtctgacagtgcacactgtggtgcgtgagctccccac  
 10 tggcttggctgggacaccagaccacgtttttggagttactctacgtctgagttcatttcaatggacgga  
 gcgggtcggttcctggacagatacttctataaccaagaggagtagtgcgcctcgacagcgacgtggggagttc  
 cggcggtgacggagctgggcccgtatgaGgagttactggaacagccagaaggacTtcctggaagaCaggcggg  
 ccgcggtgacacctactgcagacacaactacggggttgtgagagcttcacagtgcagcggcgag (SEQ ID  
 NO:1-3-2-2624) ;

15 DRB1\*110102 :

ggggacaccagaccacgtttttggagttactctacgtctgagttcatttcaatggacggagcgggtgcgt  
 tcctggacagatacttctataaccaagaggagtagtgcgcctcgacagcgacgtggggagttccggcggtgac  
 ggagctggggccgtatgaGgagttactggaacagccagaaggacTtcctggaagaCaggcgggcccgggtggac  
 acctactgcagacacaactacggggttgtgagagcttcacGgtgcagcggcgag (SEQ ID NO:1-3-3-  
 2625) ;

DRB1\*110103 :

cacgtttcttggagttactctacgtctgagttcatttcaatggacggagcgggtgcggttctggacagata  
 ctctataaccaagaggagtagtgcgcctcgacagcgacgtggggagttccggcggtgacggagctgggccc  
 cctgatgaGgagttactggaacagccagaaggacTtcctggaagaCaggcgggcccgggtggacacctactgcagac  
 25 acaactacggggttgtgagagcttcacagtgcagcggcgag (SEQ ID NO:1-3-4-2626) ;

DRB1\*110104 :

cgtttcttggagttactctacgtctgagttcatttcaacGggacggagcgggtgcggttctggacagataact

tctataaccaagaggagtAcgtcgcggcgttgacagcgacgtggggagtTccgggcccgtggacggactggggcc  
 tgatgAggagttacttggaaacagccagaaggacTtcctggaaagaCaggcggccgggtggacacactgcagacac  
 aactacggggttggtgagagcttcacagtgcagcggcag (SEQ ID NO:~~1-3-5~~2627) ;

DRB1\*1102 :

5 ggggacaccagaccacgttcttggagttactctacgtctgagtgtcattttcaatgggacggagcgggtgcgg  
 tcctggacagatacttctataaccaagaggagtacgtgcgcggcgttgacagcgacgtggggagttccggccgg  
 ggagctggggccgtatgAggagttacttggaaacagccagaaggacAtcctggaaagacGAgcggccgggtggac  
 acctactgcagacacaactacggggttgtGgagagcttcacagtgcagcggcag (SEQ ID NO:~~1-3-6~~  
2628) ;

10 DRB1\*1103 :

atggtgtgtctgaggctccctggaggctcctgcattggcagTtctgacagtgcacactgtggtgctgagctccccac  
 tggcttggctggggacaccagaccacgttcttggagttactctacgtctgagtgtcattttcaatgggacgg  
 gcgggtgcgggttcctggacagatacttctataaccaagaggagtacgtgcgcggcgttgacagcgacgtggggagttc  
 cgggggtgacggagctggggccgtatgaggagtactggaaacagccagaaggacttcctggaaagacgAgcggg

15 ccgcggtgacaccactgcagacacaactacggggttgtGgagagcttcacagtgcagcggcag (SEQ ID  
 NO:~~1-3-7~~2629) ;

DRB1\*110401 :

atggtgtgtctgaggctccctggaggctcctgcattggcagTtctgacagtgcacactgtggtgctgagctccccac  
 tggcttggctggggacaccagaccacgttcttggagttactctacgtctgagtgtcattttcaatgggacgg  
 20 gcgggtgcgggttcctggacagatacttctataaccaagaggagtacgtgcgcggcgttgacagcgacgtggggagttc  
 cgggcgggtgacggagctggggccgtatgaggagtactggaaacagccagaaggacTtcctggaaagaCaggcgg  
 ccgcggtgacaccactgcagacacaactacggggttgtGgagagcttcacagtgcagcggcag (SEQ ID  
 NO:~~1-3-8~~2630) ;

DRB1\*110402 :

25 ggggacaccagaccacgttcttggagttactctacgtctgagtgtcattttcaatgggacggagcgggtgcgg  
 tcctggacagatacttctataaccaagaggagtacgtgcgcggcgttgacagcgacgtggggagttccggccgg  
 ggagctggggccgtatgagGgagttactggaaacagccagaaggacttcctggaaagacaggcggccgggtggac

accta~~tgcagacacaactacgggttgtGgagagcttcacGgtgcagcggcag~~(SEQ ID NO:~~1-3-9~~

2631) ;

DRB1\*1105 :

ccacgttcttgagactctacgGgtgagtgtcatttcaatggacggagcgggtcggttcctggacagat

5 acttctataaccaagaggagtacgtgcgc~~ttcgacagcgacgtggggagttccggccgtgacggagctgggcgc~~  
gcctgatgAGgagtact~~ggaacagccagaaggacTtcctggaagaCaggcggccgcgtggacacactgcaga~~  
cacaactacgggttggtagagacttcacagtgcagcggcga(SEQ ID NO:~~1-4-0-2632~~) ;

DRB1\*110601 :

cg~~tttcttgagactctacgtctgagtgtcatttcaatggacggagcgggtcggttcctggacagatact~~

10 tctataaccaagaggagtacgtgcgc~~ttcgacagcgacgtggggagttccggccgtgacggagctgggcggcc~~  
tgatgaGgagtact~~ggaacagccagaaggacTtcctggaagaCaggcggccgcgtggacacactgcagacac~~  
aactacggggCtgtggagagcttcacagtgcagcggcag(SEQ ID NO:~~1-4-1-2633~~) ;

DRB1\*110602 :

tttcttgagactctacgtctgagtgtcatttcaatggacggagcgggtcggttcctggacagatacttc

15 tataaccaagaggagtacgtgcgc~~ttcgacagcgacgtggggagttccggccgtgacggagctgggcggcc~~  
atgaGgagtact~~ggaacagccagaaggacTtcctggaagaCaggcggccgcgtggacacactaTtcagacacaa~~  
ctacggggCtgtggagagcttcacagtgcagcggcag(SEQ ID NO:~~1-4-2-2634~~) ;

DRB1\*1107 :

ttggagactctacgtctgagtgtcatttcaatggacggagcgggtcggttcctggacagatacttctata

20 accaagaggagtacgtgcgc~~ttcgacagcgacgtggggagttccggccgtgacggagctgggcggcc~~  
atgAGgagtact~~ggaacagccagaaggacctcctggagcagaacggggccGggtggacaActactgcagacacaactac~~  
gggttgtGgagagcttcacagtgcagcggcag(SEQ ID NO:~~1-4-3-2635~~) ;

DRB1\*110801 :

gtctgagtgtcatttcaatggacggagcgggtcggttcctggacagatacttctataaccaagaggagtAc

25 gtgcgc~~ttcgacagcgacgtggggagttccggccgtgacggagctgggcggcc~~  
tgcgtatgAggagtact~~ggaacacactacgggttggtagagcttcacagtgcagacacaactacgggttggtagag~~  
cttcacagtgc(SEQ ID NO:~~1-4-4-2636~~) ;

DRB1\*110802 :

gtctgagtgtcatttcaatggacggagcgggtgcggttcctggacagataacttctataaccaagaggagtag  
 gtgcgcctcgacagcgacgtggggagttccggcggtgacggagctggggccgcctgatgaGagactggaaca  
 gccagaaggacctcctggaagaCaggcggccgcgtggacacctactgcagacacaactacggggttgtgagag  
 5 cttcacGtg (SEQ ID NO:1452637) ;

DRB1\*1109 :

cattttcaatggacggagcgggtgcggttcctggacagataacttcataaccaGaggagAAcgtcgccttc  
 acagcgacgtggggagttccggcggtgacggagctggggccgcctgatgAggactactggaacagccagaagg  
 cTtcctggaagaCaggcggccgcgtggacacctactgcagacacaactacggggttgtgagagcttcacagt  
 10 cag (SEQ ID NO:1462638) ;

DRB1\*1110 :

gagtgtcatttcaatggacggagcgggtgcggttcctggacagataacttcataaccaGaggagttcgtgc  
 gtttcacagcgacgtggggagttccggcggtgacggagctggggccgcctgatgAggactactggaacagcca  
 gaaggacTtcctggaagaCaggcggccgcgtggacacctactgcagacacaactacggggttgtg (SEQ ID  
 15 NO:1472639) ;

DRB1\*1111 :

tttcttgagactctacgtctgagtgtcatttcaatggacggagcgggtgcggttcctggacagataacttc  
 tataaccaagaggagtacgtgcgcctcgacagcgacgtggggagttccggcggtgacggagctggggccgcct  
 atgAggactactggaacagccagaaggacTtcctggaagacGAgcggccgcgtggacacctactgcagacaca  
 20 ctacggggttgtgagagcttcacagtgcagcggcag (SEQ ID NO:1482640) ;

DRB1\*111201 :

gagtgtcatttcaatggacggagcggagcgggtgcggttcctggacagataacttctataaccaagaggagttcgtgc  
 gtttcacagcgacgtggggagttccggcggtgacggagctggggccgcctgatgAggactactggaacagcca  
 gaaggacTtcctggaagaCaggcggccgcgtggacacctactgcagacacaactacggggttgtg (SEQ ID  
 25 NO:1492641) ;

DRB1\*111202 :

cacgtttcttgagactctacgtCtgagtgtcatttcaatggacggagcgggtgcggttcctggacagata

cttctataaccaGgaggagtTcgatcgcttcgacagcgacgtggggagtTccgggcggtgacggagctggggcgg  
 cctgatgAggagtactggaacagccagaaggacTtcctgaaagaCaggcggccgcggtgacacctactgcagac  
 acaactacggggttgtgagagcttcacagtgcagcggcag (SEQ ID NO:~~1-5-0-2642~~) ;

DRB1\*1113 :

5 ggggacaccagaccacgtttctggagtaactctacgtctgagtgtcattttcaatgggacggagcgggtgcgg  
 tcctggacagataacttccataaccaggaggatctcgcttcgacagcgacgtggggagtTccggcggtgac  
 ggagctggggcgcctgatgAGgagtactggaacagccagaaggacccctggagcGaggcggccgcggtgac  
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10 DRB1\*1114 :

ggggacaccagaccacgtttctggagtaactctacgtctgagtgtcattttcaatgggacggagcgggtgcgg  
 tcctggacagataacttctataaccaagaggaggatctcgcttcgacagcgacgtggggagttccggcggtgac  
 ggagctggggcgcctgatgAggagtactggaacagccagaaggacAtcctgaaagacGAgcggccgcggtgac  
 acctactgcagacacaactacggggttgtgagagcttcacagtgcagcggcag (SEQ ID NO:~~1-5-2-2644~~) ;

15 DRB1\*1115 :

ggggacaccagaccacgtttctggagtaactctacgtctgagtgtcattttcaatgggacggagcgggtgcgg  
 tcctggacagataacttctataaccaagaggaggatctcgcttcgacagcgacgtggggagttccggcggtgac  
 ggagctggggcgcctgatgAGgagtactggaacagccagaaggacTtcctgaaGaCaggcggccgcggtgac  
 acctactgcagacacaactacggggttgtgagagcttcacagtgcagcggcag (SEQ ID NO:~~1-5-3-2645~~) ;

DRB1\*1116 :

cacgtttctggagtaactctacgtctgagtgtcattttcaatgggacggagcgggtgcggttcctggacagata  
 cttccataaccaggaggaggAACgtgcgcttcgacagcgacgtggggagttccggcggtgacggagctggggcgg  
 25 cctgatgAggagtactggaacagccagaaggacAtcctgaaagacGAgcggccgcggtgacacctactgcagac  
 acaactacggggttgtGagagcttcacagtgcagcggcag (SEQ ID NO:~~1-5-4-2646~~) ;

DRB1\*1117 :

ggggacaccagaccacgttcttgagactctacgtGttagtgtcattttcaatggacggagcgggtgcgg  
 tcctggacagatactccataaccaggaggagttcgctgcgcggcgttcgacagcgacgtggggagta  
 ggagctggggcggcgtatgAGagactgaaacagccagaaggaccttggagcggaggcggccgAggtgg  
 acctaTtgcagacacaactacgggttgtGagagcttcacagtgcagcggcag (SEQ ID NO:~~1-5-5~~  
 5 2647) ;

DRB1\*1118 :

tttcttgagactctacgtcttagtgtcattttcaatggacggagcgggtgcggttcctggacagatacttc  
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DRB1\*1119 :

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 atgAggagactgaaacagccagaaggacAtcctgaaagaCaggcggccgcgtggacacctactgcagacacaa  
 15 ctacgggttgtgagagcttcacagtgcagcggcag (SEQ ID NO:~~1-5-7~~2649) ;

DRB1\*1120 :

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 ggagactgaaacagccagaaggacAtcctgaaagacGAgcggccgcgtggacacctactgcagacacaaactac  
 20 ggggttgtgagagcttcacagtgcagc (SEQ ID NO:~~1-5-8~~2650) ;

DRB1\*1121 :

ttggagactctacgtcttagtgtcattttcaatggacggagcgggtgcggttcctggacagatacttcata  
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 ggagactgaaacagccagaaggacatcctgaaagacGAgcggccgcgtggacacctactgcagacacaaactac  
 25 gggGtgtggaga (SEQ ID NO:~~1-5-9~~2651) ;

DRB1\*1122 :

cacgtttcttgagcaggtaaaCatgagtgtcattttcaatggacggagcgggtgcggttcctggacagata

cttctataaccaggaggagtagtgcgcttcgacagcgacgtggggagtTccggccgtgacggagctggggcg  
 cctgatgaGgagtagactgaaacagccagaaggacTtcctgaaagaCaggcggccgcggtgacacctactgcagac  
 acaactacggggttgtgagag (SEQ ID NO:~~1-6-0~~2652) ;

DRB1\*1123 :

5 ccacgttcttggagtagtctacgtctgagtagtcattttcaatggacggagcgggtgcggttcctggacagat  
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 gcctgatgAGgagtagactgaaacagccagaaggacTtcctgaaagaCaggcggccCTggtgacacctactgcaga  
 cacaactacggggttgtg (SEQ ID NO:~~1-6-1~~2653) ;

DRB1\*1124 :

10 ttcttggagtagtctacgtctgagtagtcattttcaatggacggagcgggtgcggttcctggacagatacttct  
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 tgaGgagtagactgaaacagccagaaggacTtcctgaaGaCaggcggccgcgtggacacctactgcagacacaac  
 tacggggttgtgagagcttcac (SEQ ID NO:~~1-6-2~~2654) ;

DRB1\*1125 :

15 cacgtttcttggagtagtctacgtctgagtagtcattttcaatggacggagcgggtgcggttcctggacagata  
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 cctgatgaGgagtagactgaaacagccagaaggacTtcctgaaagacaggcggcccTggtgacacctactgcagac  
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DRB1\*1126 :

20 ttggagtagtctacgtGtgcattttcaatggacggagcgggtgcggttcctggacagatacttctata  
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 ggagtagactgaaacagccagaaggacctctggagcagaggcggccgcgtggacacctactgcagacacaactac  
 ggggttgtg (SEQ ID NO:~~1-6-4~~2656) ;

DRB1\*112701 :

25 tttcttggagtagtctacgtctgagtagtcattttcaatggacggagcgggtgcggttcctggacagatactt  
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 atgaggagtagactgaaacagccagaaggacttctgaaGagCaggcggccgcgtggacaaTtactgcagacacaac

ctacggggttgtgagag (SEQ ID NO: 1-6-5-2657) ;

DRB1\*112702 :

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5 cctgatgAggagtaacttggaaacagccagaaggacttccttgaagaCaggcggccgcggtgacggacaActactgcagac

acaactacggggttgtgagagottcacagtgcagcggcag (SEQ ID NO: 1-6-6-2658) ;

DRB1\*1128 :

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10 cctgatgAggagtaacttggaaacagccagaaggacttccttgaagaCaggcggccgcggtgacggacacctactgcagac

acaactacggggttgtgagagottcacagtgcagcggcag (SEQ ID NO: 1-6-7-2659) ;

DRB1\*1129 :

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15 cctgatgAggagtaacttggaaacagccagaaggacttccttgaagaCaggcggccgcggtgacggacacctactgcagac

acaactacggggttgtgagagottcacagtgcagcggcag (SEQ ID NO: 1-6-8-2660) ;

DRB1\*1130 :

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20 cctgatgaggagtacttggaaacagccagaaggacttccttgaagaCaggcggccgcggtgacggacacctactgcagac

acaactacggggttgtgagagottcacagtgcagcggcag (SEQ ID NO: 1-6-9-2661) ;

DRB1\*1131 :

ggggacaccagaccacgtttcttggagtactctacgtctgagtgtcattttcaatgggacggagcgggtgcgg

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25 ggagctggggcggcctgtgAggagCacttggaaacagccagaaggacAtccttgaagaCaggcggccgcggtgac

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DRB1\*1132 :

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 cctgatgAGgagacttggaaacagccagaaggacTtccttggaaagaCaggcggccgTggtgacacctactgcagac  
 5 acaactacggggttggtagagagcttacagtgcagcggcag (SEQ ID NO:1-7-1-2663) ;

DRB1\*1133 :

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 ggaCtacttggaaacagccagaaggacttcccttggaaagacaggcggccgcggtgacacctactgcagacacaactac  
 10 ggggttggtagagagcttacagtgcagcggc (SEQ ID NO:1-7-2-2664) ;

DRB1\*1134 :

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 cctgatgAggagacttggaaacagccagaaggacaccttggagcagaggcggccgcggtgacacctactgcagac  
 15 acaactacggggttggtagagagcttacagtgcagcggc (SEQ ID NO:1-7-3-2665) ;

DRB1\*1135 :

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 20 ggggttggtagagagcttacagtgcagcggc (SEQ ID NO:1-7-4-2666) ;

DRB1\*1136 :

cggtttcttggagactctacgtctgagtgcatttcataatgggacggagcgggtgcggttcgtggacagataact  
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 tgatgAggagacttggaaacagccagaaggacaccttggaaagacGAgcggccgcggtgacacctactgcagacac  
 25 aactacggggttggtagagagcttacagtgcagcggc (SEQ ID NO:1-7-5-2667) ;

DRB1\*1137 :

cacgtttcttggagactctaCgtCtgaGtgcatttcataatgggacggagcgggtgcggttcgtggacagata

cttctataaccaagaggagtA~~cgtgcgcttc~~gacagcgacgtggggagtaccggccgtgacggagctggggcgg  
 cctgatgAggagtact~~ggaacagccagaaggac~~T~~cctggaaga~~Caggcggccgcgg~~tgg~~acacctactgcagac  
 acaactacggg~~ttgg~~t~~gag~~ag~~ac~~t~~tc~~ac~~ag~~tg~~cag~~cggc~~gag~~(SEQ ID NO:~~1-7-6-2668~~) ;

DRB1\*1138 :

5 cac~~gttcttgg~~ag~~tactctacgtctgagtgtcatttcttcaatgg~~acggagcgg~~gtgcgg~~tt~~cctgg~~acagata  
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 cctgatgaggG~~gt~~act~~ggaacagccagaaggactt~~c~~ctggaag~~acaggcggccgcgg~~tgg~~acacctactgcagac  
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DRB1\*1139 :

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 cctgatgagg~~gt~~act~~ggaacagccagaaggactt~~c~~ctggaaga~~gaCaggcggccgcgg~~tgg~~acacctactgcagac  
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DRB1\*1140 :

15 cac~~gttcttgg~~ag~~tactctacgtctgagtgtcatttcttcaatgg~~acggagcgg~~gtgcgg~~tt~~cctgg~~acagata  
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 cctgatgAgg~~gt~~act~~ggaacagccagaaggac~~T~~cctggaag~~acG~~acggccgcgg~~t~~gg~~acacctactgcagac  
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DRB1\*1141 :

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 atgAgg~~gt~~act~~ggaacagccagaaggac~~T~~cctggaag~~acG~~acggccgcgg~~t~~gg~~acacctactgcagaca  
 a~~ta~~c~~gggg~~t~~gt~~G~~gag~~ag~~ctt~~ac~~ag~~tg~~cag~~cggc~~gag~~(SEQ ID NO:~~1-8-0-2672~~) ;

DRB1\*1142 :

25 cac~~gttcttgg~~ag~~tactctacgtctgagtgtcatttcttcaatgg~~acggagcgg~~gtgcgg~~tt~~cctgg~~acagata  
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 cctgatgAgg~~gt~~act~~ggaacagccagaaggac~~c~~ctggaaga~~gaCaggcggccgcgg~~tgg~~acacctactgcagac

acaactacgggttgtGgagagttcacagtgcagcggcgag (SEQ ID NO:1-8-1-2673) ;

DRB1\*1143 :

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5 cctgatgaggagtactggaacacgccagaaggacttcctgaaagaCaggcggccgcggtgacacctactgcagac  
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DRB1\*120101 :

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DRB1\*120102 :

15 atggtgtgtctgaggctccctggaggctcctgcatggcagtTctgacagtgcacactgtatggtgctgagctccccac  
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gcgggtcggttActggagagacacttcataaccaggaggagCtcctgcgcttcgacacgcacgtggggagttc  
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20 NO:1-8-4-2676) ;

DRB1\*120201 :

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25 acaactacggggCtgtggagagttcacagtgcagcggcgag (SEQ ID NO:1-8-5-2677) ;

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DRB1\*120302 :

5 cacgttcttggagactctacgggtgagtgttatttcttaatgggacggagcgggtgcggttActggagagaca  
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DRB1\*1204 :

10 gagtactctacgggtgagtgttatttcttaatgggacggagcgggtgcggttactggagagacacttccataacc  
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DRB1\*1205 :

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DRB1\*1206 :

20 gggcacaccagaccacgttcttggagactctacgggtgagtgttatttcttaatgggacggagcgggtgcgg  
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25 DRB1\*1207 :

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cctgtcggcggactctggAACAGCCAGAAGGACATCCTGGGAGACAGGCGCCGCGGTGGACACCTATTGCAGAC  
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 2685) ;  
 DRB1\*130102 :  
 15 cacgtttcttggagactctacgtctgagtgtcatttcaatggacggagcgggtgcggttcctggacagata  
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 acaactacgggttgtGgagagcttcacagtgcagcggcgg (SEQ ID NO:1-9-4-2686) ;  
 DRB1\*130103 :  
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 DRB1\*130201 :  
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 DRB1\*130202 :  
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 20 ggggacaccagaccacgtttcttggagtagtctacgtctgagtgtcatttcaatggacggagcgggtgcgg  
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2692) ;  
 25 DRB1\*1305 :  
 cgtttcttggagtagtctacgtctGAAGTCATTCTCAATGGACGGAGCGGGTGCAGTTCTGGACAGATACT  
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tgatgccgagactggAACAGCCAGAAGGAC TtccttgaagaCaggcggccgcggacacctactgcagacac

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5 tcgcacacgtggggagtTccgggcggtgacggagctggggcggctgtacggactactggaaacagccagaa

ggacAtccttgaagaCaggcggccgcggacacctactgcagacacaactacggggttgtGgagagcttcaca  
(SEQ ID NO: 2-0-2-2694) ;

DRB1\*130701 :

cacgtttcttggagacttaCgtCtgaGtgtcatttcaatggacggacgggtcggttccttgaCagata

10 cTtctataaccaagaggagtAcgtgcgttcacagcgacgtggggagttacgggcggtgacggactgggcgg

cctgatgccgagactggAACAGCCAGAAGGAC TtccttggaaGA Caggcggccgcggacacctactgcagac  
acaactacggggttggtgagagcttcacagtgcagcggcag (SEQ ID NO: 2-0-3-2695) ;

DRB1\*130702 :

cacgtttcttggagactctacgtCttagtgtcatttcaatggacggacgggtcggttccttgaCagata

15 cTtctataaccaagaggagtAcgtgcgttcacagcgacgtggggagttacgggcggtgacggactgggcgg

cctgacgcTgagtaactggAACAGCCAGAAGGAC TtccttggaaGA Caggcggccgcggacacctactgcagac  
acaactacggggttggtgagagcttcacagtgcagcggcag (SEQ ID NO: 2-0-4-2696) ;

DRB1\*1308 :

ttcttggagactctacgtcttagtgtcatttcaatggacggacgggtcggttccttgaCagataacttcc

20 ataaccaggaggagtTcgtgcgttcacagcgacgtggggagttacgggcggtgacggactgggcggccta

tgccgagtaactggAACAGCCAGAAGGAC TtccttggaaGA Caggcggccgcggacacctactgcagacacaac  
tacggggttgtGgagagcttcacagtgc (SEQ ID NO: 2-0-5-2697) ;

DRB1\*1309 :

tttcttggagactctacgtcttagtgtcatttcaatggacggacgggtcggttccttggacagataacttc

25 cataaccaggaggagaAcgtgcgttcacagcgacgtggggagttacgggcggtgacggactgggcggccta

atgcggagtaactggAACAGCCAGAAGGAC TtccttggaaGA Caggcggccgcggacacctactgcagacacaac  
tacggggttgtGgagagcttcacagtgc (SEQ ID NO: 2-0-6-2698) ;

DRB1\*1310 :

cacgtttcttggagactctacgtctgagtgcatttcataatgggacggagcgggtgcggttcgttgaaCagata  
 cttccataaccaggaggagAacgtgcgcctcgacagcgacgtggggagtTccgggcggtgacggagctggggcgg  
 cctgatgccgagactggaacagccagaaggacAtcctggaagaCaAgcggccgcggtgacacctactgcagac  
 5 acaactacgggttgtGgagagottcacagtgcagcggcag (SEQ ID NO:2072699) ;

DRB1\*1311 :

cacgtttcttggagactctacgtctgagtgcatttcataatgggacggagcgggtgcggttcgttgacagata  
 cttctataaccaagaggagtAcgtgcgcctcgacagcgacgtggggagtTccgggcggtgacggagctggggcgg  
 cctgatgccgagactggaacagccagaaggacTtcctggaagaCaggcggccgcggtgacacctactgcagac  
 10 acaactacgggttgtGgagagottcacagtgcagcggcag (SEQ ID NO:2082700) ;

DRB1\*1312 :

cacgtttcttggagactctacgtCtgagtgcatttcataatgggacggagcgggtgcggttcgttgacagata  
 cttctataaccaagaggagtacgtgcgcctcgacagcgacgtggggagtaccgggcggtgacggagctggggcgg  
 cctaGcgccgagactggaacagccagaaggacAtcctggaagaCaggcggccgcggtgacacctactgcagac  
 15 acaactacgggttgtgagagottcacagtgcagcggcag (SEQ ID NO:2092701) ;

DRB1\*1313 :

cacgtttcttggagactctacgtCtgagtgcatttcataatgggacggagcgggtgcggttcgttgacagata  
 cttctataaccaagaggagtacgtgcgcctcgacagcgacgtggggagtaccgggcggtgacggagctggggcgg  
 cctaGcgccgagactggaacagccagaaggacAtcctggaagacaggcggcccTggtgacacctactgcagac  
 20 acaactacgggttgtgagagottcacagtgc (SEQ ID NO:2102702) ;

DRB1\*131401 :

tacgtctgagtgcatttcataatgggacggagcgggtgcggttcgttgacagataacttctataaccaagaggag  
 tAcgtgcgcctcgacagcgacgtggggagtTccgggcggtgacggagctggggcggcctgatgccgagactgga  
 acagccagaaggacTtcctggaGaCaggcggccgcggtgacacctactgcagacacaactacgggttggtg(

25 SEQ ID NO:2112703) ;

DRB1\*131402 :

cacgtttcttggagactctacgtctgagtgcatttcataatgggacggagcgggtgcggttcgttgacagata

cttctataaccaagaggagtacgtgcgcttcgacagcgacgtggggagtTccgggcggtgacggagctggggcgg  
 cctgacgcTgagacttggAACAGCCAGAAGGACATCCTGGAAAGACGAGCGGGCGGTGGACACCTACTGCAGAC  
 ACAACTACGGGTTGGTGGAGAGCTTCACAGTCAGCGGCAG (SEQ ID NO:2-1-2-2704) ;

DRB1\*1315 :

5 tttcttggagactctacgtctgagtgtcatttcaatgggacggagcgggtgcggttcctggAGagatacttc  
 cataaccaggaggagaacgtgcgcttcgacagcgacgtggggagtTccgggcggtgacggagctggggcggcctg  
 atgccgagtacttggAACAGCCAGAAGGACATCCTGGAAAGACGAGCGGGCGGTGGACACCTACTGCAGACACAA  
 CTACGGGTTGTGGAGAGCTTCACAGTCAGCGGCAG (SEQ ID NO:2-1-3-2705) ;

DRB1\*1316 :

10 ggagtactctacgtctgagtgtcatttcaatgggacggagcgggtgcggttcctggacagatacttcataac  
 caggaggagaacgtgcgcttcgacagcgacgtggggagttccggcggtgacggagctggggcggcctgatgcgc  
 agtacttggAACAGCCAGAAGGACATCCTGGAAAGACGAGCGGGCGGTGGACACCTACTGCAGACACAACTACGG  
 GGTTGATGAGAGCTTCACA (SEQ ID NO:2-1-4-2706) ;

DRB1\*1317 :

15 gggcacaccagaccacgtttttggagactctacgggtgagtgtTatttcaatgggacggagcgggtgcgg  
 tcctggacagataacttctataaccaagaggagtacgtgcgcttcgacagcgacgtggggagttccggcggtgac  
 ggagctgggcggcctgatgccgagtacttggAACAGCCAGAAGGACATCCTGGAAAGACGAGCGGGCGGTGGAC  
 ACCTACTGCAGACACAACTACGGGTTGTGGAGAGCTTCACAGTCAGCGGCAG (SEQ ID NO:2-1-5-  
 2707) ;

20 DRB1\*1318 :

cacgtttcttggagactctacgtctgagtgtcatttcaatgggacggagcgggtgcggttcctggacagata  
 ctccataaccaggaggAACAGTCGCGCTTCGACAGCGACGTGGGGAGTTCCGGCGGTGGACACCTACTGCAGAC  
 CCTGATGCCGAGTACTTGGAACAGCCAGAAGGACATCCTGGAAAGACAGGGGGCCCCTGGACACAC  
 ACAACTACGGGTTGTGGAGAGCTTCACAGTCAGCGGCAG (SEQ ID NO:2-1-6-2708) ;

25 DRB1\*1319 :

ggggcacaccagaccacgtttttggagactctacgtctgagtgtcatttcaatgggacggagcgggtgcgg  
 tcctggAGAGATACTTCATAACCAGGAGGTTCGTCAGCGCTTCGACAGCGACGTGGGGAGTACCGGGCGGTGAC

ggagctggggcggcgtatgccgacttgcgtactggAACAGCCAGAAGGACATCCTGGAAGACGAACGGCCGCGGTGGAC  
 acctactgcagacacaactacggggttgtGAGAGCTTCACAGTGCAGCGCGAG (SEQ ID NO:2-1-72709) ;

DRB1\*1320 :

5 cacgttcttgaggactctacgtctgagtgtcatttcaatgggacggagcgggtgcggttcctggaCagata  
 cttccataaccaggaggAAcgtagcgttcgcacagcgacgtggggagtTccggcggtgacggagctgggcgg  
 cctgatgccgacttgcgtactggAACAGCCAGAAGGACATCCTGGAAGACGAACGGCCGCGGTGGACACCTACTGCAGAC  
 ACAACTACGGGGTTGTGAGAGCTTCACAGTGCAGCGAG (SEQ ID NO:2-1-8-2710) ;

DRB1\*1321 :

10 ggggacaccagaccacgttcttgaggactctacgtCtgagtgtcatttcaatgggacggagcgggtgcgg  
 tcctggacagataacttctataaccaagaggaggtacgtagcgttcgcacagcgacgtggggagtTccggcggtgac  
 ggactggggcggcctaGcgccgacttgcgtactggAACAGCCAGAAGGACATCCTGGAAGACAGGCGGGCCGCGGTGGAC  
 acctactgcagacacaactacggggttgtgagagcttcacagtgacggcgag (SEQ ID NO:2-1-9-2711) ;

15 DRB1\*1322 :

gaccacgttcttgaggactctacgtCtgagtgtcatttcaatgggacggagcgggtgcggttcctggaCag  
 atacttctataaccaagaggaggtacgtagcgttcgcacagcgacgtggggagtTccggcggtgacggagctgggg  
 cggcctgatgccgacttgcgtactggAACAGCCAGAAGGACATCCTGGAAGACGAACGGCCGCGGTGGACACCTACTGC  
 ACGACACAACGAGGTTGTGAGAGCTTCACAGTGCAGCGCGAG (SEQ ID NO:2-2-0-2712) ;

20 DRB1\*1323 :

cgtttcttgaggactctacgtctgagtgtcatttcaatgggacggagcgggtgcggttcctggacagataact  
 tctataaccaagaggaggtacgtagcgttcgcacagcgacgtggggagtTccggcggtgacggagctggggcgg  
 tgatgccgacttgcgtactggAACAGCCAGAAGGACATCCTGGAAGACGAACGGCCGCGGTGGACACCTACTGCAGACAC  
 AACTACGGGGTTGTGAGAGCTTCACGCGACGGCG (SEQ ID NO:2-2-1-2713) ;

25 DRB1\*1324 :

cgtttcttgaggactctacgtctgagtgtcatttcaatgggacggagcgggtgcggttcctggacagataact  
 tctataaccaagaggaggtacgtagcgttcgcacagcgacgtggggagtTccggcggtgacggagctggggcggcc

tgtatgcggcgtttgtGgagagcttcacagtgcagccggc (SEQ\_ID\_N0:2-2-22714) ;

DRB1\*1325 :

5  
cacgtttctggagactCtaCgtCtgaGtgtcattttcaatggacggagcgggtgcggttccctggaCagata  
cttctataaccaagaggagtAcgtgcgcggcgacagcgacgtggggaggtTccggcggtgacggagctgggcgg  
cctgatgcgcgagactggAACAGCCAGAAGGGACCTCTGGAAAGAAGGGCGGCCGCGGTGGACACCTACTGCAGAC  
acaactacgggggttggtgaga (SEQ ID NO: ~~2-2-3-2715~~) ;

DRB1\*1326 :

10 cacgtttctggagtactctacgtctgagtgcatttcaatgggacggagcgggtgcggccctggagagata  
cttcCataaccaGgaggagAAcgtagcgcgttcgacagcgacgtggggagtagccggcggtagacggagctggggcgg  
cctgacgcTgagtagtggAACAGCCAGAAGGACTTccctggaaGAAGGGCGCCTGGACACCTACTGCAGAC  
acaactacggggttggtgagagcttcacagtgcagcggcgg (SEQ ID NO: 2-2-42716) ;

DRB1\*1327 :

15 cacgtttctggagactctacgtctgagtgtcatttcaatgggacggagcgggtgcggtaacctggacagata  
cttccataaccaggaggagaacgtgcgcgtcgacagcgacgtggggagttccggcggtacggagctggggcggt  
cctgatgccgagactggaacagccagaaggacatcctggaagacGAgcggccgcggtgacacacctactgcagac  
acaactacggggttgtGgagagcttcacagtgcagcggcgag (SEQ ID NO: 2-2-52717) ;

DRB1\*1328 :

ttggagactctacgtctgagtgtcatttcaatggacggagcgggtgcggttcctggacagatacttcata  
20 accaggaggagaacgtgcgcggcttcgacagcgacgtggggagttccggcggtgacggagctgggcggcgtatgc  
cgagtactggaacagccagaaggacatccttggaaagacgagcggccgcggtgacacacctactgcagacacaactac  
  
Cgggttgtggagagcttcac (SEQ ID NO:2-2-6-2718) ;

DRB1\*1329 :

25 cacgtttcttggagtaactctacgtctgagtgtcatttcaatgggacggagcgggtgcggttcctggaCagata  
cttccataaccaggaggagAAcgtagcgcgttcgacagcgacgtggggagTccgggcggtgacggagctggggcgg  
cctgatgccgagtaactggaacagccagaaggaccccttggaaagacGAgcgggcgcggtgacacacctactgcagac  
acaactacgggttgtgagagcttcacagtgcagcggcag (SEQ\_ID\_NO: 2272719) :

DRB1\*1330 :

tttcttggagactctacgtctgagtgtcatttcaatgggacggagcgggtgcggttcctggacagatacttc  
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 GcgccgagtaactggaacagccagaaggacAtcctgaaagaCaggcggccgcgtggacacctactgcagacacaa  
 5 ctacggggttgtgagagcttcaca (SEQ ID NO: 2-2-8-2720) ;

DRB1\*1331 :

cacgtttcttggagactctacgtctgagtgtcatttcaatgggacggagcgggtgcggttcctggacagata  
 cttccataaccaggaggagaacgtgcgcctcgacagcgacgtggggagttccggcggtgacggagctgggcgg  
 cctgTcgccgagtaactggaacagccagaaggacAtcctgaaagacGAgcggccgcgtggacacctactgcagac  
 10 acaactacggggttgtgagagcttcacagtgcagcggcga (SEQ ID NO: 2-2-9-2721) ;

DRB1\*1332 :

cacgtttcttggagactctacgtctgagtgtcatttcaatgggacggagcgggtgcggttcctggacagata  
 cttccataaccaggaggagAacgtgcgcctcgacagcgacgtggggagtaccggcggtgacggagctgggcgg  
 cctaGcgccgagtaactggaacagccagaaggacatcctgaaagacGAgcggccgcgtggacacctactgcagac  
 15 acaactacggggttgtGagagcttcacagtgcagcggcag (SEQ ID NO: 2-3-0-2722) ;

DRB1\*1333 :

cacgtttcttggagactctacgtctgagtgtcatttcaatgggacggagcgggtgcggttcctggacagata  
 cttctataaccaagaggaggtacgtagcgcctcgacagcgacgtggggagtaccggcggtgacggagctgggcgg  
 cctaGcgccgagtaactggaacagccagaaggacatcctgaaagaCaggcggccgcgtggacacaActactgcagac  
 20 acaactacggggttgt (SEQ ID NO: 2-3-1-2723) ;

DRB1\*1334 :

cacgtttcttggagactctacgtctgagtgtcatttcaatgggacggagcgggtgcggttcctggacagata  
 cttccataaccaggaggagaacOtgcgcctcgacagcgacgtggggagttccggcggtgacggagctgggcgg  
 cctgatgccgagtaactggaacagccagaaggacatcctgaaagacGAgcggccgcgtggacacctactgcagac  
 25 acaactacggggttgtgagagcttcacagtgcagcggcag (SEQ ID NO: 2-3-2-2724) ;

DRB1\*1335 :

cacgtttcttggagactctacgtctgagtgtcatttcaatgggacggagcgggtgcggttcctggacagata

cttccataaccaggaggagaacgtgcgcttcgacagcgacgtggggagttccTggcggtgacggagctggggcgg  
 cctgatgccgagacttgaacagccagaaggacatccttgaagacgagcggccgcggtgacacctactgcagac  
 acaactacggggttgtggagagcttcacagtgcagcgg (SEQ ID NO:2-3-3-2725) ;

DRB1\*1336 :

5 cacgtttcttggagactctacgtctgagtgtcatttcttcaatggacggagcgggtgcggttcttggacata  
 cttccataaccaggaggAAcgtgcgcttcgacagcgacgtggggagttccggcggtgacggagctggggcgg  
 cctgatgccgagacttgaacagccagaaggacAtccttgaagacGAgcggccgcggtgacacctactgcagac  
 acaactacggggttgtggagagcttcacagtgcagcggc (SEQ ID NO:2-3-4-2726) ;

DRB1\*1337 :

10 cacgtttcttggagactctacgtctgagtgtcatttcttcaatggacggagcgggtgcgggtcttggacagata  
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 cctgatgccgagacttgaacagccagaaggacatccttgaagaCaAgcggccgcggtgacacctactgcagac  
 acaactacggggttgtggagagcttcacGgtgcagcggc (SEQ ID NO:2-3-5-2727) ;

DRB1\*1338 :

15 cacgtttcttggagactctacgtctgagtgtcatttcttcaatggacggagcgggtgcgggtcttggacagata  
 cttaataaccaagaggagactgtgcgcttcgacagcgacgtggggagttccggcggtgacggagctggggcgg  
 cctaGcggccgagacttgaacagccagaaggacatccttgaagacGAgcggccgcggtgacacctactgcagac  
 acaactacggggttgtgg (SEQ ID NO:2-3-6-2728) ;

DRB1\*1339 :

20 cacgtttcttggagactctacgtctgagtgtcatttcttcaatggacggagcgggtgcgggtcttggacagata  
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 cctgatgccgagacttgaacagccagaaggacAtccttgaagacGAgcggccgcggtgacacctactgcagac  
 acaactacggggttgtggagagcttcacagtgcagcggc (SEQ ID NO:2-3-7-2729) ;

DRB1\*1340 :

25 ttggagactctacgtctgagtgtcatttcttcaatggacggagcgggtgcgggtcttggacata  
 accaggaggAAcgtgcgcttcgacagcgacgtggggagttccggcggtgacggagctggggggcgtatgc  
 cgagtacttgaacagccagaaggacAtccttgaagacGAgcggccgcggtgacacctactgcagacacaactac

ggggttgtGgagagcttcacagtgcagcggcg (SEQ ID NO:2-3-8-2730) ;

DRB1\*1341 :

cacgtttcttggagactctacgtctgagtgtcattttcaatggacggagcgggtgcggtaacctggacagata  
 cttccataaccaggaggagaacgtgcgcttcgacagcgacgtggggagttccggcggtgacggagctgggcgg  
 5 cctgatgccgagacttggaaacagccagaaggacatccttgaagacGAgcggccgcggtgacacctactgcagac  
 acaactacgggttggtgagagottcacagtgcagcggcgag (SEQ ID NO:2-3-9-2731) ;

DRB1\*1342 :

cacgtttcttggagactctacgtctgagtgtcattttcaatggacggagcgggtgcggttcctggacagata  
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 10 cctgatgccgagacttggaaacagccagaaggacTtccttgaagaCaggggccgcggtgacacctactgcagac  
 acaactacgggttggtgagagottcacagtgcagcggcgag (SEQ ID NO:2-4-0-2732) ;

DRB1\*1343 :

cacgtttcttggagactctacgtctgagtgtcattttcaatggacggagcgggtgcggttcctggacagata  
 cttccataaccaggaggagaacgtgcgcttcgacagcgacgtggggagttccggcggtgacggagctgggcgg  
 15 cctg0tgoggagacttggaaacagccagaaggaccttggaaagacGAgcggccgcggtgacacctactgcagac  
 acaactacgggttggtgagagottcacagtgcagcggcgag (SEQ ID NO:2-4-1-2733) ;

DRB1\*1344 :

cacgtttcttggagactctacgtCtgaGtgtcattttcaatggacggagcgggtgcggttccttggacagataCagata  
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 20 cctgatgccgagacttggaaacagccagaaggaccttggagcagaggcggccgcggtgacacctactgcagac  
 acaactacgggttggtgagagottcacagtgcagcggcgag (SEQ ID NO:2-4-2-2734) ;

DRB1\*1345 :

ttggagactctacgtctgagtgtcattttcaatggacggagcgggtgcggttccttggacagataacttctata  
 accaagaggaggactgtgcgcttcgacagcgacgtggggagttccggcggtgacggagctggggccctg0tgc  
 25 ggagcacttggaaacagccagaaggacAtccttggaaagacGAgcggccgcggtgacacctactgcagacacaactac  
 ggggttggtgagag (SEQ ID NO:2-4-3-2735) ;

DRB1\*1346 :

cacgtttcttggagactctacgtctgagtgtcatttcaatgggacggagcgggtgcggttctggacagata  
 cttctataaccaagaggagtAcgtgcgcttcgacagcgacgtggggagttccggcggtgacggagctgggcgg  
 cctgT0gccgagactggaacagccagaaggacTtcctggaAgaCaggcggccgcggtgacacctactgcagac  
 acaactacggggttggtgagagcttcacagtgcagcggcag (SEQ ID NO:2-4-4-2736) ;

5 DRB1\*1347 :

cacgtttcttggagactctacgtCttagtgtcatttcaatgggacggagcgggtgcggttctggacagata  
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 cctgatgccgagactggaacagccagaaggacTtcctggaagacaggcgggcccTggtgacacctactgcagac  
 acaactacggggttggtgagagcttcacGgtgcagcggcag (SEQ ID NO:2-4-5-2737) ;

10 DRB1\*1348 :

cacgtttcttggagactctacgtCttagtgtcatttcaatgggacggagcgggtgcggttctggacagata  
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 cctaGcgccgagactggaacagccagaaggacatcctggaagacAGcgggcccgcggtgacacctactgcagac  
 acaactacggggttggtgagagcttcacagtgcagcggcag (SEQ ID NO:2-4-6-2738) ;

15 DRB1\*1349 :

cacgtttcttggagactctacgtCttagtgtcatttcaatgggacggagcgggtgcggttctggacagata  
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 cctaGcgccgagactggaacagccagaaggacTtcctggaagaCaggcgggcccgcggtgacacctactgcagac  
 acaactacggggttggtgagagcttcacagtgcagcgg (SEQ ID NO:2-4-7-2739) ;

20 DRB1\*1350 :

cacgtttcttggagactctacgtctgaGtgtcatttcaatgggacggagcgggtgcggttctggacagata  
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 cctgatgccgagactggaacagccagaaggacTtcctggaagaCaggcgggcccgcggtgacacctactgcagac  
 acaactacggggttggtgagagcttcacagtgcagcggcag (SEQ ID NO:2-4-8-2740) ;

25 DRB1\*1351 :

cacgtttcttggagactctacgtctgagtgtcatttcaatgggacggagcgggtgcggttctggacagata  
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DRB1\*1352

5 cacgtttcttggagttactctacgtctgagtgtcatttcaatgggacggagcggtgcggttcgttggata  
cttccataaccaGgaggagtAcgtgcgcttcgacagcgacgtggggagtTccgggcgtgacggagctggggcgg  
cctgatgccgagttactggaacagccagaaggacAtccttggaaagacGAgcgggcgcggtgacacctactgcagac  
acaactacgggttgtGgagagcttcacagtg (SEQ ID NO:~~250~~2742) ;

DRB1\*1353 :

cacgtttctggagactctacgtctgagtgtcattttcaatgggacggagcgggtgcggcccttggaaGagata  
10 ctccataaccaggaggagaAcgtgcgcgttcgacagcgacgtggggagttaccggcggtgacggagctggggcggt  
cctgatgccgagacttggAACAGCCAGAAGGACATCCTGGAAAGACGAAGCGGCCGCGGTGGACACCTACTGCAGAC  
acaactacgggttgtGgagagcttcacagtgcagcggcga (SEQ ID NO: 2512743) ;

DRB1\*1354 :

15 cacgtttctggagactctacgtctgagtgtcattttcaatgggacggagcgggtgcggccctggacagata  
cctctataaccAACAGGAGTACGTGCGCTTCGACAGCGACGTGGGGAGTTCCGGCGGTGACGGAGCTGGGCAG  
cctgtcgccgagtCctggAACAGGCCAGAAGGACTTCCTGGAAGACGAGCggggccgcggtgacaccctactgcagac  
acaactacgggttgtGgagagcttcacagtgcagcggcag (SEQ ID NO: 2522744) ;

DRB1\*1355 :

tttcttgagactctacgtCtgagtgtcatttcaatgggacggagcgggtgcggttccgtggacagatacttc  
20 tataaccaagaggagtagctgcgcttcgacagcgacgtggggagtagccggcggtagcggagctgggcggcta  
gCgccgagtagtggAACAGCCAGAGAC TtcctggAAAGACAGGCGGGCCC Tggtagcacacctactgcagacacaa  
ctacggggtttgtgagagcttacGgtgcagcggcag (SEQ ID NO: 2-5-3-2745) ;

DRB1\*140101 :

atggtgtgtctgaggccctggaggctcgtcatggcagTtctgacagtgcacactgtggtgctgagcccccac  
25 tggctttggctgggacaccagaccacgtttctggagttactctacgtGtggatgtcattttcaatgggacggg  
gcgggtgcggttcctggacagataacttccataaccaggaggagttcgtcgcctcgacagcgacgtggggagttac  
cgggcggtgacggagctggggcgccctgtcgccggactggaaacagccagaaggacccctggagcgaggcgcc

ccgAggtggacacctaTtgagacacaactacggggttgtGgagagcttcacagtgcagcggcgag (SEQ ID  
 NO:~~2-5-42746~~) ;

**DRB1\*140102 :**

cacgtttcttggagtagtctacgtCtgagtgtcatttcaatggacggagcgggtgcggccctggacagata  
 5 cttccataaccaggaggagttcgctgcgttcgacagcgacgtggggagttccggccgtgacggagctggggcgg  
 cctgCtgccggactggaacagccagaaggacccctggagcggaggccgAggtggacacctactgcagac  
 acaactacggggttgtGg (SEQ ID NO:~~2-5-5-2747~~) ;

**DRB1\*1402 :**

atggtgtgtctgaggctccctggaggctcctgcatggcagTtctgacagtgcacactgtatggtgctgagctccccac  
 10 tggcttggctgggacaccagaccacgtttttggagttactctacgtctgagtgtcatttcaatggacgga  
 gcgggtcggttcctggagagatacttcataaccaGgaggagAAcgtgcgcctcgacagcgacgtggggagtag  
 cgggcgggtacggagctgggcggcctgatgccgagttactggaacagccagaaggacccctggagcagaggcgg  
 ccgcggtgacaccaactgcagacacaactacggggttgtgagagcttcacagtgcagcggcgag (SEQ ID  
 NO:~~2-5-6-2748~~) ;

15 **DRB1\*1403 :**

atggtgtgtctgaggctccctggaggctcctgcatggcagTtctgacagtgcacactgtatggtgctgagctccccac  
 tggcttggctgggacaccagaccacgtttttggagttactctacgtctgagtgtcatttcaatggacgga  
 gcgggtcggttcctggagagatacttcataacccaggaggagAAcgtgcgcctcgacagcgacgtggggagtag  
 cgggcgggtacggagctgggcggcctgatgccgagttactggaacagccagaaggacccctggaaagacaggcgg  
 20 cccTggtgacaccaactgcagacacaactacggggttgtgagagcttcacagtgcagcggcgag (SEQ ID  
 NO:~~2-5-7-2749~~) ;

**DRB1\*1404 :**

atggtgtgtctgaggctccctggaggctcctgcatggcagTtctgacagtgcacactgtatggtgctgagctccccac  
 tggcttggctgggacaccagaccacgtttttggagttactctacgggtgagtgtTatttcaatggacgga  
 25 gcgggtcggttcctggacagatacttcataaccaggaggagttcgctgcgcctcgacagcgacgtggggagtag  
 cgggcgggtacggagctgggcggcctgctgcggagcactggaacagccagaaggacccctggagcggaggcgg  
 ccgAggtggacacctaTtgagacacaactacggggttgtGgagagcttcacagtgcagcggcgag (SEQ ID

NO: 2-5-82750 ;

DRB1\*140501 :

cacgtttcttggagttactctacgtctgagtgtcaAttcttaatgggacggagcgggtgcggttcctggacagata  
 cttccataaccaggaggagttcgtgcgcttcgacagcgacgtggggagttaccggcggtgacggagctggggcgg  
 5 cctgatgcTgagttactggaacagccagaaggacccctggagcggaggcggccgaggtggacacctatgcagac  
 acaactacggggttgtGgagagottcacagtgcagcggcag (SEQ ID NO: 2-5-9-2751) ;

DRB1\*140502 :

cacgtttcttggagttactctacgtctgagtgtcaAttcttaatgggacggagcgggtgcggttcctggacagata  
 cttccataaccaggaggagttcgtgcgcttcgacagcgacgtggggagttaccggcggtgacggagctggggcgg  
 10 cctgatgccgagttactggaacagccagaaggacccctggagcggaggcggccgaggtggacacctatgcagac  
 acaactacggggttgtGgagagottcacagtgcagcggcag (SEQ ID NO: 2-6-0-2752) ;

DRB1\*1406 :

cacgtttcttggagttactctaGtctgagtgtcattttcaatgggacggagcgggtgcggttcctggagata  
 cttccataaccaggaggaggAAcgtgcgcttcgacagcgacgtggggagttaccggcggtgacggagctggggcgg  
 15 cctgatgccgagttactggaacagccagaaggacccctggagcggaggcggccggtggacacctactgcagac  
 acaactacggggttgtGgagagottcacagtgcagcggcag (SEQ ID NO: 2-6-1-2753) ;

DRB1\*140701 :

cacgtttcttggagttactctacgtCttagttcattttcaatgggacggagcgggtgcggttcctggacagata  
 cttccataaccaggaggagttcgtgcgcttcgacagcgacgtggggagttaccggcggtgacggagctggggcgg  
 20 cctg0tgcggaggactggaacagccagaaggacccctggagcggaggcggccgAggtggacacctatgcagac  
 acaactacggggttgtgagagottcacagtgcagcggcag (SEQ ID NO: 2-6-2-2754) ;

DRB1\*140702 :

cacgtttcttggagttactctacgtctgagtgtcattttcaatgggacggagcgggtgcggttcctggacagata  
 cttccataaccaggaggagttcgtgcgcttcgacagcgacgtggggagttaccggcggtgacggagctggggcgg  
 25 cctg0tgcggaggactggaacagccagaaggacccctggagcggaggcggccgaggtggacacctatgcagac  
 acaactacggggttgtgagagottcacGgtgcagcggcag (SEQ ID NO: 2-6-3-2755) ;

DRB1\*1408 :

cacgtttcttggagtagtTctacgtCtgagtgtcatttcaatgggacggagcgggtgcggttcgtggacagata  
 cttccataaccaggaggagttcgctgcgttcgacagcgacgtggggagtagccggcgggtgacggagctggggcgg  
 cctgatgcggagCactggaacagccagaaggacccctggagcggaggcggccgAggtggacacctatTgcagac  
 acaactacggggttgtGgagagottcacagtgcagcggcga (SEQ ID NO:2-6-4-2756) ;

5 DRB1\*1409 :

tttcttggagtagtctaCgtctgaGtgtcatttcaatgggacggagcgggtgcggttcgtggacagataacttc  
 CataaccaGgaggagAacgtgcgcgttcgacagcgacgtggggagtagccggcgggtgacggagctggggcggcctg  
 atgcccggacttggaaacagccagaaggacccctggagcagaggcggccgggtggacacctactgcagacacaa  
 ctacggggttgtgagagottcacagtgcagcggcag (SEQ ID NO:2-6-5-2757) ;

10 DRB1\*1410 :

ttcttggagcaggtaaacAtgagtgtcatttcaatgggacggagcgggtgcggttcgtggacagataacttc  
 ataaccaggaggagttcgctgcgttcgacagcgacgtggggagtagccggcgggtgacggagctggggcggcctgC  
 tgcggagcactggaaacagccagaaggacccctggagcggaggcggccgAggtggacacctatTgcagacacaa  
 tacggggttgtGgagagottcacagtgcagcgg (SEQ ID NO:2-6-6-2758) ;

15 DRB1\*1411 :

gagtagtctacgggtgagtgtTatttcaatgggacggagcgggtgcggttcgtggacagataacttcataacc  
 aggaggagttcgctgcgttcgacagcgacgtggggagtagccggcgggtgacggagctggggcggcctgatAGga  
 gtacttggaaacagccagaaggacccctggagcggaggcggccgAggtggacacctatTgcagacacacaactacgg  
 gtttgtGg (SEQ ID NO:2-6-7-2759) ;

20 DRB1\*1412 :

gtctgagtgtcatttcaatgggacggagcgggtgcggttcgtggacagataacttcataaccaggaggagAAC  
 gtgcgcgttcgacagcgacgtggggagtagccggcgggtgacggagctggggcggcctgatgccgagactggaaaca  
 gccagaaggacccctggaaagacaggcggccCTggggacacctactgcagacacacaactacggggttgtGg (SEQ  
 ID NO:2-6-8-2760) ;

25 DRB1\*1413 :

gagtagtctacgtctgagtgtcatttcaatgggacggagcgggtgcggttcgtggacagataacttcataacc  
 aggaggagAACgtgcgcgttcgacagcgacgtggggagtagccggcgggtgacggagctggggcggcctaGcgccga

gtactggaacagccagaaggacacctcctggaggcagaggcgggccgcggacacctactgcagacacaactacggg

gttggtg (SEQ ID NO: 2-6-9-2761) ;

DRB1\*1414 :

ttcttgagactctacgttgtcattttcaatggacggagcgggtgcggccctggacagatacttc  
 5 ataaccaggaggagtTcgacgcgtggggagttaccggccgtacggagctggggccgtga  
 tgccgacttgaaacagccagaaggacacctcctggaggcggaggccgAggtggacacctaTtgca  
 gacacaac  
 tacggggttgtgagactcacagt (SEQ ID NO: 2-7-0-2762) ;

DRB1\*1415 :

ctctacgggtgagtgtTatttcttcaatggacggagcgggtgcggccctggacagatacttcataaccaggag  
 10 gagtTcgacgcgtggggagttaccggccgtacggagctggggccgtatggca  
 gacacc  
 gaaacagccagaaggacTtccttgaagacaggcccccTggggacacctactgcagacacaactacggggttgt  
 Ggagagttcacagtgcag (SEQ ID NO: 2-7-12763) ;

DRB1\*1416 :

ttggagactctacgtctgagtgtcattttcaatggacggagcgggtgcggccctggacagatacttcata  
 15 accaggaggatTCGCGCTTGCACAGCGACGTGGGGAGTTACCGGCCGTACGGAGCTGGGGCCGTGATGCGAGTACT  
 ggacttgaaacagccagaaggacAtccttgaagacGAgccggccgcgtggacacctactgcagacacaactac  
 ggggttgtGgag (SEQ ID NO: 2-7-2-2764) ;

DRB1\*1417 :

cacgtttcttggagactctacgtctgatgtcattttcaatggacggagcgggtgcggccctggacagata  
 20 ctgcataaccaggaggAAacgtgcgttcacagcgacgtggggagttaccggccgtacggagctggggccgt  
 cctgatggccgacttgaaacagccagaaggacacctcctggaggcagaggccggccgcgtggacacctactgcagac  
 acaactacgggttgtGgagagttcacagtgcagcg (SEQ ID NO: 2-7-3-2765) ;

DRB1\*1418 :

gagactctacgtctgagtgtcattttcaatggacggagcgggtgcggccctggagagatacttcataacc  
 25 aggaggaggAAacgtgcgttcacagcgacgtggggagttaccggccgtacggagctggggccgtatgcTga  
 gtacttgaaacagccagaaggacacctcctggaggcggaggccgAggtggacacctaTtgca  
 gacacaactacgg  
 gttgtGgagagttcacagtgcagcg (SEQ ID NO: 2-7-4-2766) ;

DRB1\*1419 :

ggggacaccagaccacgttcttggAgtactctaCgtctgagtgtcattttcaatgggacggagcgggtgcgg  
 tccttgaGagataacttccataaccaggaggagAACgtgcgcctcgacagcgacgtggggagtagccggcgg  
 ggagctgggcggcctgatgccgacttggaaacagccagaaggacccctggagcagaAgcggccgogg  
 5 acctactgcagacacaactacgggttggtgagagcttcaca (SEQ ID NO: 2-7-5-2767) ;

DRB1\*1420 :

ttggagttactctacgtCtgagtgtcattttcaatgggacggagcgggtgcggttCcttgaGagataacttccata  
 accaggaggagtTcgtgcgcctcgacagcgacgtggggagtagccggcggtgacggagctggggcggc  
 cctgatgc  
 cgagtactggaaacagccagaaggacccctggagcagaggcggccgcggtgacacactactgc  
 10 gagacacaactacgggttGgaga (SEQ ID NO: 2-7-6-2768) ;

DRB1\*1421 :

ttggagttactctacgtctgagtgtcattttcaatgggacggagcgggtgcggttccttgaGagataacttccata  
 accaggaggagAACgtgcgcctcgacagcgacgtggggagtagccggcggtgacggagctggggcggc  
 cctgatgc  
 cgagtactggaaacagccagaaggacccctggagcagaAgcggccgcggtgacacactactgc  
 15 gagacacaactacgggttGgaga (SEQ ID NO: 2-7-7-2769) ;

DRB1\*1422 :

cacgtttcttggagttactctacgtctgagtgtcattttcaatgggacggagcgggtgcggttccttggacagata  
 cttccataaccaggaggagtTcgtgcgcctcgacagcgacgtggggagtagccggcggtgacggagctggggc  
 cctg0tgccggagCactggaaacagccagaaggacTtccttgaAgaCaggcggccgcggtgacacactactgc  
 20 gagac  
 acaactacgggttggtgagagcttacagtgcagcggcgg (SEQ ID NO: 2-7-8-2770) ;

DRB1\*1423 :

cacgtttcttggagttactctacgtCtgagtgtcattttcaatgggacggagcgggtgcggttccttggacagata  
 cttccataaccaggaggagtTcgtgcgcctcgacagcgacgtggggagtagccggcggtgacggagctggggc  
 cctgatgccgagttactggaaacagccagaaggacccctggagcggaggcggccggAggtggacacctaTtg  
 25 gagac  
 acaactacgggttggtgagagcttacagtgcagcggcgg (SEQ ID NO: 2-7-9-2771) ;

DRB1\*1424 :

ttcttggagttactctacgtctgagtgtcattttcaatgggacggagcgggtgcggttccttgaGagataacttcc

ataaccaGgaggagAAcgtgcgcttcgacagcgacgtggggagtaccggcggtgacggagctggggccctga  
tgccgagtaactggaacagccagaaggacAtcctggagcagCgcggccgcgtggacacctactgcagacacaac  
tacggggttgtgagagctcacagtgcagcggcag (SEQ ID NO:~~2-8-0-2772~~) ;

DRB1\*1425 :

5 tttcttggagtaactctacgtCttagtgtcatttcaatgggacggagcgggtgcggttcctggacagatacttc  
tataaccaagaggagtAcgtgcgcttcgacagcgacgtggggagtaccggcggtgacggagctggggccctg  
CtgcggagCactggaacagccagaaggacTtcctggaAgaCaggcggccgcgtggacacctactgcagacacaac  
ctacggggttgtgagagctcacagtgcagcggcag (SEQ ID NO:~~2-8-1-2773~~) ;

DRB1\*1426 :

10 cacgttcttggagtaactctacgtcttagtgtcatttcaatgggacggagcgggtgcAgttcctggacagata  
cttccataaccaggaggagttcgctgcgttcgacagcgacgtggggagtaccggcggtgacggagctggggcgg  
cctgctcggagactggaacagccagaaggacacctctggagcggaggcggccgaggtggacacctattgcagac  
acaactacggggttgtGagagagctcacagtgcagcggcag (SEQ ID NO:~~2-8-2-2774~~) ;

DRB1\*1427 :

15 cacgttcttggagtaactctacgtcttagtgtcatttcaatgggacggagcgggtgcggttcctggaGagata  
cttccataaccaggaggagAAcgtgcgcttcgacagcgacgtggggagtaccggcggtgacggagctggggcgg  
cctgatgccgagtaactggaacagccagaaggacTtcctggaagaCaggcggccCTggtgacacctactgcagac  
acaactacggggttgtgagagctcacagtgcagcggcag (SEQ ID NO:~~2-8-3-2775~~) ;

DRB1\*1428 :

20 cacgttcttggagtaactctacgggttagtgttatttcaatgggacggagcgggtgcggttcctggacagata  
cttccataaccaggaggagttcgctgcgttcgacagcgacgtggggagtaccggcggtgacggagctggggcgg  
cctgCtgcggagactggaacagccagaaggacacctctggagcggaggcggccgaggtggacacctattgcagac  
acaactacggggCtgtGagagagcttcaca (SEQ ID NO:~~2-8-4-2776~~) ;

DRB1\*1429 :

25 cacgttcttggagtaactctacgtcttagtgtcatttcaatgggacggagcgggtgcggttcctggaGagata  
cttccataaccaGgaggagAAcgtgcgcttcgacagcgacgtggggagtaccggcggtgacggagctggggcgg  
cctgatgccgagtaactggaacagccagaaggacacctctggagcagaggcggccgcgtggacacctactgcagac

acaactacggggCtgtggagagttcacagtgcagcggcgag (SEQ ID NO: 2-8-5-2777) ;

DRB1\*1430 :

tttcttggagactctacgtctgaGtgtcattttcaatgggacggagcgggtgcggttcctggaGagataacttc  
CataaccaGgaggagAacgtgcgcttcgacagcgacgtggggagtTccggcgtgacggagctgggcggcctg  
5 atgccgagtactggAACAGCCAGAAGGACCTCCTGGAGCAGGGCGGGCGGTGGACACACTGCAGACACAA  
ctacggggttgtgagagttcaca (SEQ ID NO: 2-8-6-2778) ;

DRB1\*1431 :

tttcttggagactctacgggtgagtgtTattttcaatgggacggagcgggtgcggttcctggacagataacttc  
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10 CtgccggactggAACAGCCAGAAGGACCTCCTGGAGCAGGGCGGGCGGTGGACACCTATtgcaGACACAA  
ctacggggttgtGgagagttcaca (SEQ ID NO: 2-8-7-2779) ;

DRB1\*1432 :

cacgtttttggagtaCtacgtCtgagtgtcattttcaatgggacggagcgggtgcggttcctggacagata  
cttccataaccaggaggagttcgtgcgcttcgacagcgacgtggggagtaccggcgtgacggagctgggcgg  
15 cctgCtgccggactggAACAGCCAGAAGGACCTCCTGGAGCAGGGCGGGCGGTGGACACCTACTGCAGAC  
acaactacggggttgtGgagagttcacaGAGCGGCGAG (SEQ ID NO: 2-8-8-2780) ;

DRB1\*1433 :

ttggagactctacgtctgagtgtcattttcaatgggacggagcgggtgcggttcctggacagataacttcata  
accaggaggagaAcgtgcgcttcgacagcgacgtggggagtTccggcgtgacggagctgggcggcctgtatgc  
20 cgagactggAACAGCCAGAAGGACCTCCTGGAGCAGGGCGGGCGAGGTGGACACACTTGCAAGACACA  
ggggttgtGgagagttcacaGAGCGGCGAG (SEQ ID NO: 2-8-9-2781) ;

DRB1\*1434 :

cacgtttttggagtaCtacgtCtgagtgtcattttcaatgggacggagcgggtgcggttcctggacagata  
cttccataaccaggaggagttcgtgcgcttcgacagcgacgtggggagtaccggcgtgacggagctgggcgg  
25 cctgatgcggagCactggAACAGCCAGAAGGACCTCCTGGAGCAGGGCGGGCGGTGGACACCTATtgcaGAC  
acaactacggggttgtGgagagttcacaGAGCGGCGAG (SEQ ID NO: 2-9-0-2782) ;

DRB1\*1435 :

cacgtttcttggagactctacgtctgagtgtcatttcaatgggacggagcgggtgcggttctggacagata  
cttcataaccaggaggagttcgctcgacagcgacgtggggagtTccgggcggtgacggagctgggcgg  
cctgOtgcggagactggaacagccagaaggacccctggagcggaggcggccgAggtggacacctaaTgcagac  
acaactacgggttgtGagagcttcacagtgcagcgg (SEQ ID NO:2-9-1-2783) ;

5 DRB1\*1436 :

cacgtttcttggagactctacgtctgagtgtcatttcaatgggacggagcgggtgcggttctggacagata  
cttcataaccaggaggagttcgctcgacagcgacgtgCgggagtaccggcggtgacggagctgggcgg  
cctgatgccgagactggaacagccagaaggacccctggagcggaggcggccgaggtggacacctaaTgcagac  
acaactacgggttgtGagagcttcacagtgcagcggcag (SEQ ID NO:2-9-2-2784) ;

10 DRB1\*1437 :

cacgtttcttggagactctacgtctgagtgtcaAttcttcaatgggacggagcgggtgcggttctggacagata  
cttcataaccaggaggagttcgctcgacagcgacgtggggagtaccggcggtgacggagctgggcgg  
cctgatgctgagactggaacagccagaaggacatccctggagcaggCgcggccgcggtgacacctactgcagac  
acaactacgggttgtGagagcttcacagtgcagcggcag (SEQ ID NO:2-9-3-2785) ;

15 DRB1\*1438 :

cacgtttcttggagactctacgtctgagtgtcatttcaatgggacggagcgggtgcggttctggacagata  
cttcataaccaggaggagttcgctcgacagcgacgtggggagtaccggcggtgacggagctgggcgg  
cctgOtgcggagactggaacagccagaaggacccctggagcggaggcggccgaggtggacaaTactgcagac  
acaactacgggttgtGagagcttcacagtgcagcggcag (SEQ ID NO:2-9-4-2786) ;

20 DRB1\*1439 :

cacgtttcttggagactccctacgtCttagtgcatttcaatgggacggagcgggtgcggttctggacagata  
cttcataaccaggaggagttcgctcgacagcgacgtggggagtaccggcggtgacggagctgggcgg  
cctgOtgcggagactggaacagccagaaggacccctggagcggaggcggccgAggtggacacctaaTgcagac  
acaactacgggttgtGagagcttcacagtgcagcggcag (SEQ ID NO:2-9-5-2787) ;

25 DRB1\*1440 :

cacgtttcttggagactctacgtctgagtgtcatttcaatgggacggagcgggtgcggttctggagata  
cttcataaccaggaggagTcgctcgacagcgacgtggggagtaccggcggtgacggagctgggcgg

cctgatccgagtaactggAACAGCCAGAAGGACCTCCTGGAAAGA~~CAGGCGGGCC~~TGGTGGACACCTACTGCAGAC  
 ACAACTACGGGTTGGTGGAGAGCTCACAGTCAGCGGCCAG (SEQ ID NO: 2-9-6-2788) ;

DRB1\*1441 :

5   cacgtttcttggagtaactcta~~G~~t~~C~~tgagtgcatttc~~A~~atggacggagcgggtgcgg~~T~~GGAGATA  
 cttccataaccaggaggagt~~T~~c~~O~~tgcgcttc~~G~~acagcgacgtggggag~~T~~accgggcgg~~T~~gacggagctggggcgg  
 cctgatccgagtaactggAACAGCCAGAAGGACCTCCTGGAGCAGAGGCCGCCGGTGGACACCTACTGCAGAC  
 ACAACTACGGGTTGGTGGAGAGCTCACAGTCAGCGGCCAG (SEQ ID NO: 2-9-7-2789) ;

DRB1\*1442 :

10   cacgtttcttggagtaactctacgtctgagtgcatttc~~A~~atggacggagcgggtgcgg~~T~~GGACAGATA  
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 cctgatccgagtaactggAACAGCCAGAAGGACCTCCTGGAGCAGAGGCCGCCGGTGGACACCTAT~~T~~gcagac  
 ACAACTACGGGTTGGTGGAGAGCTCACAGTCAGCGGCCAG (SEQ ID NO: 2-9-8-2790) ;

DRB1\*1443 :

15   cacgtttcttggagtaactctacgtctgagtgcatttc~~A~~atggacggagcgggtgcgg~~T~~GGACAGATA  
 cttccataaccaggaggagttc~~G~~tg~~C~~gc~~T~~tc~~G~~acagcgacgtggggag~~T~~accggcgg~~T~~gacggagctggggcgg  
 cctgatgc~~T~~gagtactggAACAGCCAGAAGGACCTCCTGGAGCAGAGGCCGCCGGTGGACACCTAT~~T~~gcagac  
 ACAACTACGGGTTGGAGAGCTCACAGTCAGCGGCCAG (SEQ ID NO: 2-9-9-2791) ;

DRB1\*1444 :

20   cacgtttcttggagtaactctacgtctgagtgcatttc~~A~~atggacggagcgggtgcgg~~T~~GGACAGATA  
 ct~~T~~ccataaccaggaggagttc~~G~~tg~~C~~gc~~T~~tc~~G~~acagcgacgtggggag~~T~~accggcgg~~T~~gacggagctggggcgg  
 cctgatgc~~T~~gagtactggAACAGCCAGAAGGACCTCCTGGAGCAGAGGCCGCCGGTGGACACCTAT~~T~~gcagac  
 ACAACTACGGGTTGGTGGAGAGCTCACAGTCAGCGGCCAG (SEQ ID NO: 3-0-0-2792) ;

DRB1\*1445 :

25   cacgtttcttggagtaactctacgtctgagtgcatttc~~A~~atggacggagcgggtgcgg~~T~~GGACAGATA  
 cttccataaccaggaggagttc~~G~~tg~~C~~gc~~T~~tc~~G~~acagcgacgtggggag~~T~~accggcgg~~T~~gacggagctggggcgg  
 cctgatgc~~T~~gagtactggAACAGCCAGAAGGACCTCCTGGAGCAGAGGCCGCCGGTGGACACCTAT~~T~~gcagac  
 ACAACTACGGGTTGTGGAGAGCTCACAGTCAGCGGCCAG (SEQ ID NO: 3-0-1-2793) ;

DRB1\*150101 :

atggtgtgtctgaagctccctggaggctcctgcatgacagcgctgacagtgcacactgtatggtgctgagctccccac  
tggcttgTctgggacacccgaccacgtttccctgtggcagcctaagagggagtgtcatttcttaatgggacgga  
gcgggtgcggttcctggacagatacttctataaccaggaggatccgtgcgccttcgacagcgacgtggggagttc  
5 cgggcggtgacggagctggggcgcctgacgctgagttacttggaaacagccagaaggacatcctggagcaggcgcgg  
ccgcggtgacacctactgcagacacaactacgggttggagagcttcacagtgcagcggcgg (SEQ ID  
NO: 3-0-22794) ;

DRB1\*150102 :

cacgttcctgtggcagcctaagagggagtgtcatttcttaatgggacggagcgggtgcggttcctggacagata  
10 cttctataaccaggaggatccgtgcgccttcgacagcgacgtggggagttccggcgggtgacggagctggggcgg  
cctgacgctgagttacttggaaacagccagaaggacatcctggagcaggcgcggccgcggtgacacctactgcagac  
acaactacggAggtgtGgagagcttcacagtgcagcgg (SEQ ID NO: 3-0-32795) ;

DRB1\*150103 :

cacgttcctgtggcagcctaagagGgagtgtcatttcttaatgggacggagcgggtgcggttcctggacagata  
15 cttctataaccaggaggatccgtgcgccttcgacagcgacgtggggagttccggcgggtgacggagctggggcgg  
cctgacgctgagttacttggaaacagccagaaggacatcctggagcaggcgcggccgcggtgacacctatTgcagac  
acaactacgggttGgagagcttcacagtgcagcgg (SEQ ID NO: 3-0-42796) ;

DRB1\*150104 :

cacgttcctgtggcagcctaagagGgagtgtcatttcttaatgggacggagcgggtgcggttcctggacagata  
20 cttctataaccaggaggatccgtgcgccttcgacagcgacgtggggagttccggcgggtgacggagctggggcgg  
cctgatgccgagttacttggaaacagccagaaggacAtcctggagcaggCgcggccgcggtgacacctactgcagac  
acaactacgggttGgagagcttcacagtgcagcggcgg (SEQ ID NO: 3-0-52797) ;

DRB1\*150201 :

ggggacacccgaccacgttccctgtggcagcctaagagGgagtgtcatttcttaatgggacggagcgggtgcgg  
25 tcctggacagatacttctataaccaggaggatccgtgcgccttcgacagcgacgtggggagttccggcgggtgac  
ggagctggggcggcctgcgcTgagttacttggaaacagccagaaggacAtcctggagcaggCgcggccgcggtgac  
acctactgcagacacaactacgggttggtgagagcttcacagtgcagcggcgg (SEQ ID NO: 3-0-6

2798) ;

DRB1\*150202 :

gagtgtcatttcttaatggacggagcgggtgcggttcctggacagatacttctataaccaggaggagtccgtgc  
gcttcgacagcgacgtggggagtTccgggcgtgacggagctgggcggcctgatgccgacttggaaacagcca  
5 gaaggacAtcctggagcagG0gcggccgcgtggacacctactgcagacacaactacggggttg (SEQ ID  
NO:~~3-0-72799~~) ;

DRB1\*150203 :

cacgtttcctgtggcagcctaagagggagtgtcatttcttaatggacggagcgggtgcggttcctggacagata  
cttctataaTcaggaggagtccgtgcgttcgacagcgacgtggggagttccggcgtgacggagctgggcgg  
10 cctgacgcgtgagtaactggAACAGCCAGAAGGACATCCTGGAGCAGGCAGGGCCGCCGTGGACACCTACTGCAGAC  
ACAACATACGGGTTGGT (SEQ ID NO:~~3-0-8-2800~~) ;

DRB1\*1503 :

ggggacacccgaccacgtttcctgtggcagcctaagagGgagtgtcatttcttaatggacggagcgggtgcgt  
tcctggacagaGacttctataaccaggaggagtccgtgcgttcgacagcgacgtggggagttccggcgtgac  
15 ggagctgggcggcctgacgcTgagtaactggAACAGCCAGAAGGACAtcctggagcaggG0gcggccgcgtggac  
ACCTACTGCAGACACAACATACGGGTTGTGAGAGCTTCACAGTGCAGCGCGAG (SEQ ID NO:~~3-0-9-2801~~) ;

DRB1\*1504 :

ttcctgtggcagcctaagagGgagtgtcatttcttaatggacggagcgggtgcggttcctggacagatacttct  
20 ataaccaggaggagtccgtgcgttcgacagcgacgtggggagttccggcgggtgacggagctgggcggcctga  
cgctgagtaactggAACAGCCAGAAGGACTccctggagcaggG0gcggccgcgtggacacacctactgcagacacaac  
tacggggttgtGAGAGCTTCACAGTG (SEQ ID NO:~~3-1-0-2802~~) ;

DRB1\*1505 :

ttcctgtggcagcctaagagGgagtgtcatttcttaatggacggagcgggtgcggttcctggacagatacttct  
25 ataaccaggaggagtccgtgcgttcgacagcgacgtggggagttccggcgggtgacggagctgggcggcctga  
cgctgagtaactggAACAGCCAGAAGGACCTCTGGAGCAGGAGG0gcggccgcgtggacacacctactgcagacacaac  
tacggggttgtGAGAGCTTCACAGTGCAGCGAG (SEQ ID NO:~~3-1-1-2803~~) ;

DRB1\*1506 :

ctgtggcagcctaagagggagtgtcatttcttaatgggacggagcgggtgcggttcctggacagatacttctata  
accaggaggagtccgtgcgttcgacagcgacgtggggagttccggcgg0acggagctggggcggcctgacgc  
ttagtactggaacagccagaaggacatcctggagcaggcgcggccgcgtggacacctactgcagacacaactac  
5 ggggttgtgagagcttcacagtgcagcggcag (SEQ ID NO:~~3-1-2-2804~~) ;

DRB1\*1507 :

tttcctgtggcagcctaagagGgagtgtcatttcttaatgggacggagcgggtgcggttcctggacagatacttc  
tataaccaggaggagtccgtgcgttcgacagcgacgtggggagttccggcgggtgacggagctggggcggcctg  
acgcTgagtactggaacagccagaaggacAtcctggagcaggCgcggccgcgtggacacctactgcagacaca  
10 ctacgggttgtGgagagc (SEQ ID NO:~~3-1-3-2805~~) ;

DRB1\*1508 :

cacgtttcctgtggcagcctaagagggagtgtcatttcttaatgggacggagcgggtgcggttcctggacagata  
cttctataaccaggaggagtccgtgcgttcgacagcgacgtggggagttccggcgggtgacggagctggggcgg  
cctgacgctgagtaactggaacagccagaagAacatcctggagcaggcgcggccgcgtggacacctactgcagac  
15 acaactacgggttgtgagagcttcacagtgcagcggcag (SEQ ID NO:~~3-1-4-2806~~) ;

DRB1\*1509 :

cacgtttcctgtggcagcctaagagggagtgtcatttcttaatgggacggagcgggtgcggttcctggacagata  
cttctataaccaggaggagtccgtgcgttcgacagcgacgtggggagttccAggcgggtgacggagctggggcgg  
cctgacgctgagtaactggaacagccagaaggacatcctggagcaggCgcggccgcgtggacacctactgcagac  
20 acaactacgggttgtgagagcttcacagtgcagcggcag (SEQ ID NO:~~3-1-5-2807~~) ;

DRB1\*1510 :

gtttcctgtggcagcctaagagGgagtgtcatttcttaatgggacggagcgggtgcggttcctggacagatactt  
ctataaccaggaggagtccgtgcgttcgacagcgacgtggggagttccggcgggtgacggagctggggcggcct  
gacgctgagtaactggaacagccagaaggacatcctggaaagacgAgcggccgcgtggacacctactgcagacaca  
25 actacgggttgtGgagagc (SEQ ID NO:~~3-1-6-2808~~) ;

DRB1\*1511 :

cacgtttcctgtggcagcctaagagGgagtgtcatttcttaatgggacggagcgggtgcggttcctggacagata

cttctataaccaggaggagtccgtgcgcttcgacagcgacgtggggagtaccggcggtgacggagctggggcg  
 cctgacgcTgagtaactggaacagccagaaggacAtcctggagcaggCgcggccgcggtgacacctactgcagac  
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DRB1\*1512 :

5 gcacgttccgtggcagcctaagagGgagtgtcattttcaatggacggagcgggtgcggttcctggacagat  
 acttctataaccaggaggagtccgtgcgcttcgacagcgacgtggggagttccggcggtgacggagctgggcgc  
 gcctaGcgcgagtaactggaacagccagaaggacAtcctggagcaggCgcggccgcggtgacacctactgcaga  
 cacaactacggggttgtGgagagcttcacagtgcagcggcgag (SEQ ID NO:~~3-1-8~~2810) ;

DRB1\*1513 :

10 cacgttccgtggcagcctaagagGgagtgtcattttcaatggacggagcgggtgcggttcctggacagata  
 ctctataaccaggaggagtccgtgcgcttcgacagcgacgtggggagttccggcggtgacggagctgggcgg  
 cctgacgcTgagtaactggaacagcca...ggacAtcctggagcaggCgcggccgcggtgacacctactgcagac  
 acaactacggggttgtGgagagcttcacagtgcagcgg (SEQ ID NO:~~3-1-9~~2811) ;

DRB1\*160101 :

15 atggtgtgtctgaagactccctggaggctcctgcatgacagcgctgacagtgacactgatggtgctgagctccccac  
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 gcggtgcggttcctggacagataacttctataaccaggaggagtccgtgcgcttcgacagcgacgtggggagttac  
 cggcggtgacggagctggggccctgacgctgagtaactggaacagccagaaggacTtcctggaaagacaggcgCg  
 ccgcggtgacacctactgcagacacaactacggggttgtgagagcttcacagtgcagcggcgag (SEQ ID  
 NO:~~3-2-0~~2812) ;

DRB1\*160102 :

20 cgtttccgtggcagcctaagagGgagtgtcattttcaatggacggagcgggtgcggttcctggacagataact  
 tctataaccaggaggagtccgtgcgcttcgacagcgacgtggggagttaccggcggtgacggagctgggcggcc  
 tgacgctgagtaactggaacagccagaaggacTtcctggaaagaCaggcggccgcggtgacacctactgcagacac  
 25 aactacggggttgtgagagcttcaca (SEQ ID NO:~~3-2-1~~2813) ;

DRB1\*160201 :

atggtgtgtctgaagactccctggaggctcctgcatgacagcgctgacagtgacactgatggtgctgagctccccac

tggcttggctgggacacccgaccacgtttcctgtggcagcctaagagGgagtgtcatttcttaatggacgga  
 gcgggtgcggttcctggacagatacttctataaccaggaggagtccgtgcgcctcgacagcgacgtggggagtagc  
 cggcggtgacggagctgggcggcctgacgctgagtaactggaacagccagaaggacctctggaaagacaggcgC  
 ccgcggtgacacactgcagacacaactacgggttggtagagcttcacagtgcagcggcag (SEQ ID  
 5 NO:3-2-2814) ;  
 DRB1\*160202 :  
 tttcctgtggcagcctaagagGgagtgtcatttcttaatggacggagcgggtgcggttcctggacagatacttc  
 tataaccaggaggagtccgtgcgcctcgacagcgacgtggggagtagccggcgggtgacggagctggggcggcctg  
 acgctgagtaactggaacagccagaaggacctctggaaagaCaggcggccgcgtggacacactgcagacacaa  
 10 ctacgggttggtag (SEQ ID NO:3-2-3-2815) ;  
 DRB1\*1603 :  
 atggtgtgtctgaagactccctggaggctcctgcatgacagcgctgacagtgacactgatggtgctgagctccccac  
 tggcttggctgggacacccgaccacgtttcctgtggcagcctaagagggagtagtcatttcttaatggacgga  
 gcgggtgcggttcctggacagatacttctataaccaggaggagtccgtgcgcctcgacagcgacgtggggagtagc  
 15 cggcggtgacggagctgggcggcctgacgctgagtaactggaacagccagaaggacctctggaaagacagggCcg  
 ccgcggtgacacactgcagacacaactacgggttggtagagcttcacagtgcagcggcag (SEQ ID  
 NO:3-2-4-2816) ;  
 DRB1\*1604 :  
 tggcagcctaagagggagtagtcatttcttaatggacggagcgggtgcggttcctggacagatacttctataacc  
 20 aGgaggagtccgtgcgcctcgacagcgacgtggggagtagccggcgggtgacggagctgggcggcctgacgcTga  
 gtactggaacagccagaaggacTtcctggaaagaCaggcggccCTggtagacacactgcagacacaactacggg  
 gttggtag (SEQ ID NO:3-2-5-2817) ;  
 DRB1\*1605 :  
 ctgtggcagcctaagagGgagtgtcatttcttaatggacggagcgggtgcggttcctggacagatacttctata  
 25 accaggaggagtccgtgcgcctcgacagcgacgtggggagtagccggcgggtgacggagctgggcggcctgacgc  
 tgtagtactggaacagccagaaggacAtcctggaaagacaggcgCgccgcgtggacacactactgcagacacaactac  
 ggggttggtag (SEQ ID NO:3-2-6-2818) ;

DRB1\*1607 :

cacgtttcctgtggcagcctaagaggaggagtgtcatttcaatgggacggagcgggtgcggttccggacagata  
 cttctataaccaggaggagtccgtgcgcctcgacagcgacgtggggagtagccggcggtgacggagctggggcgg  
 cctgacgctgagtaactggaacagccagaaggacatcctggaagacaggcgcgcgcggtgacacctactgcagac  
 5 acaactacggggttgtgagagcttcacagtca (SEQ ID NO: ~~3-2-7-2819~~) ;

DRB1\*1608 :

cacgtttcctgtggcagcctaagagGgagtgtcatttcaatgggacggagcgggtgcggttccctggacagata  
 cttctataaccaggaggagaAcgtdgcgcctcgacagcgacgtggggagtagccggcggtgacggagctggggcgg  
 cctgacgctgagtaactggaacagccagaaggacTtcctggaagacaggcgCgcgcggtgacacctactgcagac  
 10 acaactacggggttgtgagagcttcacagtgcagcggcag (SEQ ID NO: ~~3-2-8-2820~~) ;

DRB3\*010101 :

ggggacacccgaccacgtttcttggagctgcGtaagtctgagtcatttcaatgggacggagcgggtgcgg  
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 ggagctggggcggcctgtCgcgcgtcctggaacagccagaaggacctctggagcagaagcggggccGggtggac  
 15 aaTtactgcagacacaactacggggttgtgagagcttcacagtgcagcggcag (SEQ ID NO: ~~3-2-9-2821~~) ;

DRB3\*01010201 :

atggtgtgtctgaagactccctggaggctccagcttggcagcgttgcacagtgcactgtatggtgctgagctcccac  
 tggcttCgctgggacacccgaccacgtttcttggagctgcgttaagtctgagtcatttcaatgggacgga  
 20 gcgggtcgggtacctggacagataacttccataaccaggaggagttcctgcgcctcgacagcgacgtggggagtag  
 cggcgggtgacggagctggggcggcctgtcggcgcgtcctggaacagccagaaggacctctggagcagaagcggg  
 gcoGggtggacaattactgcagacacaactacggggttgtgagagcttcacagtgcagcggcag (SEQ ID  
 NO: ~~3-3-0-2822~~) ;

DRB3\*010103 :

25 ggggacacccgaccacgtttcttggagctgcGtaagtctgagtcatttcaatgggacggagcgggtgcgg  
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aaTtactgcagacacaactacggggttgtgagac (SEQ ID NO: 3-3-1-2823) ;

DRB3\*010104 :

cacgtttcttggagctcgtaagtctgagtgtcattttcaatggacggagcgggtgcggtaacctggacagata

cttccataaccaggaggagttcctgcgttcacagcgacgtggggagtaccggcggtgacggagctggggcgg

5 cctgtcgccgagtcttggaaacagccagaaggacccctggagcagaagcggggccgggtggacaaTtactgcagac

acaactacggAggttggtg (SEQ ID NO: 3-3-2-2824) ;

DRB3\*0102 :

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accttggaaCagataacttccataaccaggaggagttc0tgcgttcacagcgacgtggggagtaccggcggtgac

10 ggagctggggccgtgt0gccgagtcttggaaacagccagaaggacccctggagcagaagcggggccGgggtggac

aaTtactgcagacacaactacggggttgtgagac (SEQ ID NO: 3-3-3-2825) ;

DRB3\*0103 :

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15 cctgt0gccgagtcttggaaacagccagaaggacccctggagcagaagcggggccGgggtggacaaTtactgcagac

acaactacggggttgtgagac (SEQ ID NO: 3-3-4-2826) ;

DRB3\*0104 :

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20 cctgt0gccgagtcttggaaacagccagaaggacccctggagcagaagcggggccGgggtggacaaTtactgcagac

acaactacggggttgtgagac (SEQ ID NO: 3-3-5-2827) ;

DRB3\*0105 :

cacgtttcttggagctgcgttaagtctgagtgtcattttcaatggacggagcgggtgcggtaacctgAacagata

cttccataaccaggaggagttcctgcgttcacagcgacgtggggagtaccggcggtgacggagctggggcgg

25 cctgtcgccgagtcttggaaacagccagaaggacccctggagcagaagcggggccgggtggacaaTtactgcagac

acaactacggggttgtgagac (SEQ ID NO: 3-3-6-2828) ;

DRB3\*0106 :

cacgtttcttggagctgcGtaagtctgagtgtcatttcaatgggacggagcgggtgcggtacctggacagata  
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 cctgtGgccgagt~~c~~c~~t~~ggaacagccagaaggac~~c~~c~~t~~ggagcagaagcgggcGggtggacaaTtactgcagac  
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5 DRB3\*0107 :

cacgtttcttggagctgcGtaagtctgagtgtcatttcaatgggacggagcgggtgcggtacctggacagata  
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 cctgatgccgagtact~~g~~gaacagccagaaggac~~c~~c~~t~~ggagcagaAgcgggcCggtggacaaTtactgcagac  
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10 DRB3\*0108 :

cacgtttcttggagctgcGtaagtctgagtgtcatttcaatgggacggagcgggtgcggtacctggacagata  
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 cctgtGgccgagt~~c~~c~~t~~ggaacagccagaaggac~~c~~c~~t~~ggagcagaagcgggcGggtggacaaTtactgcagac  
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15 DRB3\*0109 :

cacgtttcttggagctgcGtaagtctgagtgtcatttcaatgggacggagcgggtgcgg~~t~~c~~t~~ggagagaca  
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 cctgtGgccgagt~~c~~c~~t~~ggaacagccagaaggac~~c~~c~~t~~ggagcagaagcgggcGggtggacaaTtactgcagac  
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20 DRB3\*0110 :

cacgtttcttggagctgc~~g~~taagtctgagtgtcatttcaatgggacggagcgggtgcggtacctggacagata  
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 cctgtc~~g~~ccgagt~~c~~c~~t~~ggaacagccagaaggac~~c~~c~~t~~ggagcagaagcgggcCgggtggacaattactgcagac  
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25 DRB3\*0201 :

atgg~~t~~gtctgaagctcc~~t~~ggaggctccagct~~g~~gc~~a~~gc~~g~~ttgacag~~t~~gacact~~g~~at~~g~~gtgct~~g~~ag~~c~~ctccc~~g~~ac  
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gccccgtgcgggttcctggagagacacttccataaccaggaggatcgcgcgcgttcgacagcgacgtggggagttac  
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gccaggtggacaattactgcagacacaactacgggttgtGagagcttcacagtgcagcggcgag (SEQ\_ID  
NO:3-4-2-2834) ;

No: ~~342~~2834) ;

5 DRB3\*020201 :

ggggacacccgaccacgtttcttgGagctgcttaagtctgagtgcatttcaatggacggagcgggtgcggtt  
tcctggagagaCacttccataaccaggaggagtacgGcgcttcgacagcgcacgtggggagtagccggccggtgtgaG  
ggagctggggcggcctgatgccgagtagtggAACAGCCAGAAGGGACCTCCTGGAGCAGAACGGGCCAGGTGGAC  
aaTactgcagacacaactacggggttggtgagagcttcacagtgcagcggcag (SEQ ID NO: 3-4-3)

10      2835) ;

DRB3\*020202 :

cacgtttctggagctgcttaagtctgagtgcatttcaatgggacggagcgggtgcggccctggagagaCa  
cttccataaccaggaggagtagcgCgcgcttcgacagcgacgtggggagtagccggcggtgaGggagctggggcg  
cctgatgccgagtagctggAACAGCCAGAAGGACCTCCTGGAGCAGAAGCGGGGCCAggtggacaActactgcagac  
15 acaactacggggttgggt (SEQ ID NO: 3-4-4-2836) ;

DRB3\*020203 :

cacgtttcttgagctgttaagtctgagtgtcattcttcaatgggacggagcgggtgcggttcctggagagaca  
cttcataaccaggaggagtagcgccgcggcgttgcacagcgacgtggggagtagccggcggtgagggagctggggcgg  
cctgatgccgagtagtggAACAGCCAGAAGGACCTCCTGGAGCAGAGCGGGGCCAGGTGGACAATTACTGCAGGc

20 acaactacgggttgtgagagcttacacgtgcagcggcgag (SEQ ID NO:~~345~~2837) ;

DRB3\*020204 :

cacgtttctggagctgcttaagtctgagtgcatttcaatgggacggagcgggtgcggccctggagagaca  
cttccataaccaggaggagtacgcgcgttcgacagcgacgtggggagtagccggcggtgaGggagctgggcgg  
cctgatgcGgagtagtactggAACAGCCAGAAGGACCTCCTGGAGCAGAAGCGGGGCCAGGTGGACAAATactgcagac  
25 acaactacggggttggtagagagcttcacagtgcagcggcgag (SEQ ID NO: 3-4-6-2838) ;

DRB3\*0203 :

ttggagctgcttaagtctgagtgcatttctcaatggagggcggtgcggttcctggagagaCacttccata

accaGgaggagtcgtgcgttgcacagcgacgtggggagtaccggccgtgaGggagctggggccctgatgc  
 ctagtactggaacagccagaaggacccctggagcagaagcggggccaggtggacaaTtactgcagacacaactac  
 ggggttgtgaga (SEQ ID NO: ~~3-4-7-2839~~) ;

DRB3\*0204 :

5 cacgtttcttgagactgttaagtctgagtgtcatttcttcaatggacggagcgggtgcggttcctggagagaca  
 ctccataaccaggaggactacgcgcgttgcacagcgacgtggggagtaccggccgtgaGggagctggggccg  
 cctgatgccgagactggaacagccagaaggacccctggagcagaagcggggccGgggtggacaActactgcagac  
 acaactacgggttgtGgagagcttcacagtgcagcggcag (SEQ ID NO: ~~3-4-8-2840~~) ;

DRB3\*0205 :

10 cgtttcttgagactgttaagtctgagtgtcatttcttcaatggacggagcgggtgcgggtcctggaGagatact  
 tccataaccaggaggactacgcgcgttgcacagcgacgtggggagtaccggccgtgaGggagctggggccg  
 tgatgccgagactggaacagccagaaggacccctggagcagaagcggggccaggtggacaaTtactgcagacac  
 aactacgggttgtgagagcttcacagtgcag (SEQ ID NO: ~~3-4-9-2841~~) ;

DRB3\*0206 :

15 cacgtttcttgagactgttaagtctgagtgtcatttcttcaatggacggagcgggtgcgggtcctggagagaca  
 ctccataaccaggaggAAacgcgcgttgcacagcgacgtggggagtaccggccgtgaGggagctggggccg  
 cctgatgccgagactggaacagccagaaggacccctggagcagaagcggggccaggtggacaaTtactgcagac  
 acaactacgggttgtg (SEQ ID NO: ~~3-5-0-2842~~) ;

DRB3\*0207 :

20 ttggagactgttaagtctgagtgtcatttcttcaatggacggagcgggtgcgggtcctggagagacacttcata  
 accaggaggactacgcgcgttgcacagcgacgtggggagtaccggccgtgaGggagctggggccctgTCgc  
 cgactgtggacacagccagaaggacccctggagcagaagcggggccaggtggacaaTtactgcagacacaactac  
 ggggttgtgagag (SEQ ID NO: ~~3-5-1-2843~~) ;

DRB3\*0208 :

25 cacgtttcttgagactgttaagtctgagtgtcatttcttcaatggacggagcgggtgcgggtcctggagagaca  
 ctccataaccaggaggactacgcgcgttgcacagcgacgtggggagtaccggccgtgaGggagctggggccg  
 ctaGccgcgactggaacagccagaaggacccctggagcagaagcggggccaggtggacaaTtactgcagac

acaactacggggttgt (SEQ ID NO: 3-5-2-2844) ;

DRB3\*0209 :

1 cacgtttcttggagctgcttaagtctgagtgtcattttcaatgggacggagcgggtgcggttctggagagaca  
 cttccataaccaggaggagtacgCgcgcttcgacagcgacgtggggagtaccggcgggtacggagctggggcgg  
 5 cctgtcccgagtCctgaaacagccagaaggacccctggagcagaagcggggccAggtggacaaTtactgcagac  
 acaactacggggttgtgagagcttcaca (SEQ ID NO: 3-5-3-2845) ;

DRB3\*0210 :

10 ggggacacccgaccacgtttcttgGagctgcttaagtctgagtgtcattttcaatgggacggagcgggtgcgg  
 tcctggagagaCacttccataaccaggaggagtacgCgcgcttcgacagcgacgtggggagtaccggcgggtgac  
 15 ggagctggggcggcctgatgccgagttactgaaacagccagaaggacccctggagcagaagcggggccAggtggac  
 aaTtactgcagacacaactacggggttgtgagagcttcacagtgcagcggcag (SEQ ID NO: 3-5-4-  
 2846) ;

DRB3\*0211 :

20 ggggacacccgaccacgtttcttggagctgcttaagtctgagtgtcattttcaatgggacggagcgggtgcgg  
 tcctggagagacacttccataaccaggaggagtacgcgcgccttcgacagcgacgtggggagtaccggcgggtgaG  
 ggagctggggcggcctgatgccgagttactgaaacagccagaaggacAtcctggagcagaagcggggccaggtggac  
 aaTtactgcagacacaactacggggttgtgagagcttcacagtgcagcggcag (SEQ ID NO: 3-5-5-  
 2847) ;

DRB3\*0212 :

25 cacgtttcttgcagctgcttaagtctgagtgtcattttcaatgggacggagcgggtgcggttctggagagaCa  
 cttccataaccaggaggagtacgCgcgcttcgacagcgacgtggggagtaccggcgggtgaGggagctggggcgg  
 cctgatgccgagttactgaaacagccagaaggacccctggagcagaagcggggccaggtggacaaTtactgcagac  
 acaactacggggttgtgagagcttcacagtgcagcggcag (SEQ ID NO: 3-5-6-2848) ;

DRB3\*0213 :

30 cacgtttcttggagctgcttaagtctgagtgtcattttcaatgggacggagcgggtgcggCtcctggagagaca  
 cttccataaccaggaggagtacgcgcgccttcgacagcgacgtggggagtaccggcgggtgagggagctggggcgg  
 cctgatgccgagttactgaaacagccagaaggacccctggagcagaagcggggccaggtggacaaattactgcagac

acaactacggggttgtgagagctcacagtgcagcggcgag (SEQ ID NO: 3-5-7-2849) ;

DRB3\*0214 :

cacgtttcttggagctgcttaagtctgagtgtcattttcaatgggacggagcgggtgcggttctggagagaca  
cttccataaccaggaggagtacgcgcgttcgacacgcgacgtggggagtaccggcggtgagggagctggggcgg

5 cctgatgccgagtaactggaacagccagaaggacccctggagcagaagcggggccaggtggacaattactgcagac  
acaactacggggttg0ttagagcttcacagtgcagcggcgag (SEQ ID NO: 3-5-8-2850) ;

DRB3\*0215 :

cacgtttcttggagctgcttaagtctgagtgtcattttcaatgggacggagcgggtgcggttctggagagaCa  
cttccataaccaggaggagtacg0gcgcgttcgacacgcgacgtggggagtaccggcggtgaGggagctggggcgg

10 cctgatgccgagtaactggaacagccagaaggacccctggagcagaagcggggccAggtggacacctactgcagac  
acaactacggggttgtgagagcttcacagtgcagcggcgag (SEQ ID NO: 3-5-9-2851) ;

DRB3\*0216 :

cacgtttcttggagctgcttaagtctgagtgtcattttcaatgggacggagcgggtgcggttctggagagaca  
cttccataaccaggaggagtacgcgcgttcgacacgcgacgtggggagtaccggcggtgaGggagctggggcgg

15 cctgctcggagCactggaacagccagaaggacccctggagcagaagcggggccaggtggacaaTactgcagac  
acaactacggggttgtgagagcttcacagtgcagcggcgag (SEQ ID NO: 3-6-0-2852) ;

DRB3\*0217 :

cacgtttcttggagctgcttaagtctgagtgtcattttcaatgggacggagcgggtgcggttctggagagaca  
cttccataaccaggaggagtacgcgcgttcgacacgcgacgtggggagtaccggcggtgaGggagctggggcgg

20 cctgatgccgagtaactggaacagccagaaggacTtcctggagcagaagcggggccaggtggacaaTactgcagac  
acaactacggggttgtgagagcttcacagtgcagcggcgag (SEQ ID NO: 3-6-1-2853) ;

DRB3\*030101 :

ggggacacccgaccacgtttcttggagctgcttaagtctgagtgtcattttcaatgggacggagcgggtgcgg  
tcctggagagatacttccataaccaggaggagttcgtgcgttcgacacgcgacgtggggagtaccggcggtgac

25 ggagctggggcggcctgtcggcgtCctggaacagccagaaggacccctggagcagaagcggggccaggtggac  
aaTactgcagacacaactacggggtgtGgagagcttcacagtgcagcggcgag (SEQ ID NO: 3-6-2-  
2854) ;

DRB3\*030102 :

cacgtttcttggagctgcttaagtctgagtgtcatttcaatgggacggagcgggtgcggttcctggagagata  
 cttccataaccaggaggagttcgctgcgttcgacagcgacgtggggagtagccggccgtgacggagctggggcgg  
 cctgtcgccgagtccctgaaacagccagaaggacccctggagcagaaggccccaggtggacaattactgcagac  
 5 acaactacggCgttgtggagagcttcacagtgcagccgag (SEQ ID NO:3-6-3-2855) ;

DRB3\*0302 :

cacgtttcttggagctgcttaagtctgagtgtcatttcaatgggacggagcgggtgcggttcctggagagaCa  
 cttccataaccaggaggagttcgctgcgttcgacagcgacgtggggagtagccggccgtgacggagctggggcgg  
 cctgtcgccgagtCctgaaacagccagaaggacccctggagcagaaggccccaggtggacaattactgcagac  
 10 acaactacgggttgtGg (SEQ ID NO:3-6-4-2856) ;

DRB3\*0303 :

tttcttggagctgcttaagtctgagtgtcatttcaatgggacggagcgggtgcggttcctggagataacttc  
 cataaccaggaggagtTcgctgcgttcgacagcgacgtggggagtagccggccgtgacggagctggggccctg  
 tCccgagtCctgaaacagccagaaggacccctggagcagaaggccccGggtgacaaattactgcagacacaa  
 15 ctacgggttgtgagagcttcaca (SEQ ID NO:3-6-5-2857) ;

DRB4\*010101 :

atggtgtgtctgaagctccctggaggctcctgtatggcagcgctgacagtgcatttgcggatcccac  
 tggcttggctgggacacccaaccacgtttttggaggcaggctaagtgtgagtgatccctcaatgggacgg  
 gcgagttggaaacctgatcagatacatctataaccaagaggagtacgcgcgtacaacagtgcacccgg  
 20 caggcgggtacggagctggggccctgacgctgagttactggaaacagccagaaggacccctggagcggaggcgg  
 ccgagggtggacacctactgcagataacaactacgggttgtggagagcttcacagtgcagccgag (SEQ ID  
 NO:3-6-6-2858) ;

DRB4\*0102 :

gagcgagtgtggaaacctgatcagatacatctataaccaagaggagtacgcgcgtacaacagtgcacccgg  
 25 accaggcgggtacggagctggggccctgacgctgagttactggaaacagccagaaggacccctggagcggaggc  
 ggccgagggtggGcacctactgcagataacaactacgggttgtggagagcttcacagtgcagccgag (SEQ ID  
 NO:3-6-7-2959) ;

DRB4\*010302 :

ggggacacccaaccacgttcttgagcaggctaagtgtgagtgcatttcCtcaatggacggagcgagtgtgga  
 aCtgcatacgatcacatctataaccaagaggagtacgccgcctacaacacgtgacactggggagtagccaggcgggtgac  
 ggagctgggcccctgacgctgagtaactgaaacagccagaaggacccctggagcggaggcggccgaggtggac  
 5 acctactgcagaTacaactacggggttgtggagagcttcacagtgcagcggcag (SEQ ID NO: ~~3-6-8~~  
2860) ;

DRB4\*010303 :

atggtgtgtctgaagactccctggaggctcctgtatggcagcgctgacagtgcattgaCggtgctgagctccccac  
 tggctttggctgggacacccaaccacgttcttgagcaggctaagtgtgagtgcatttcctcaatggacgga  
 10 gcgagtgtgaaacctgatcagatcacatctataaccaagaggagtacgccgcctacaacacgtgacactggggagtagc  
 caggcggtgacggagctgggcccctgacgctgagtaactgaaacagccagaaggacccctggagcggaggcgg  
 ccgagggtggacacctaTtgagatacaactacggggttgtggagagcttcacagtgcagcggcag (SEQ ID  
 NO: ~~3-6-9~~2861) ;

DRB4\*010304 :

15 cacgtttcttgagcaggctaagtgtgagtgcatttcataatggacggagcgagtgtggacacctgatcagata  
 catctataaccaagaggagtacgccgcctacaacacgtgaTctggggagtagccaggcgggtgacggagctgggccc  
 cctgacgctgagtaactgaaacagccagaaggacccctggagcggaggcggccgaggtggacacctactgcagat  
 acaactacggggttgtggagagcttcacagtgcagcggcag (SEQ ID NO: ~~3-7-0~~2862) ;

DRB4\*0104 :

20 cacgtttcttgagcaggctaagtgtgagtgcatttcataatggacggagcgagtgtggacacctgatcagata  
 catctataaccaagaggagtacgccgcctacaacacgtgacactggggagtagccaggcgggtgacggagctgggccc  
 cctgacgctgagtaactgaaacagccagaaggacccctggagcggaggcggccgaggtggacaActactgcagaT  
 acaactacggggttgtggagagcttcacagtgcagcggcag (SEQ ID NO: ~~3-7-1~~2863) ;

DRB4\*0105 :

25 ttggagcaggctaagtgtgagtgcatttcCtcaatggacggagcgagtgtggAacctgatcagatcacatctata  
 accaagaggagtacgccgcctacaacacgtgacactggggagtagccaggcgggtgacggagctggggcccctgacgc  
 tgagtaactgaaacagccagaaggacccctggagcggaggcggccgaggtggacacctactgcagacacaactac

ggggtttgtgagag (SEQ ID NO: 3-7-2-2864) ;

DRB4\*0106 :

cacgtttcttggaggcaggctaagtgtgagtgtcatttc0tcaatgggacggagcgagtgtggaa0ctgatcagata  
catctataaccaagaggagtacgcgcgctacaacagtgacactggggagtaccaggcgtgacggagctggggcgg  
5 cctgacgctgagtaactggaacagccagaaggacccctggagcggaggcggccgaggtggacacctactgcagaT  
acaactacggggttgtggagagcttcacagtgcagcggcag (SEQ ID NO: 3-7-3-2865) ;

DRB4\*0201N :

ggtgctgagctccccactggcttggctgggacacccAaccacgttttggagcaggctaagtgtgagtgtcat  
ttcctcaatgggacggcgtcgtacagatacatctataaccaagaggagtacgcgcgctacaacagtgacctgggg  
10 gagtaccaggcgtgacggagctggggccctgacgctgagtaactggaacagccagaaggacccctggagcgg  
ggcgggccgaggtggacacctactgcagataactacggggtgtGgagagcttcacagtgcagcggcag (SEQ  
ID NO: 3-7-4-2866) ;

DRB5\*010101 :

atggtgtgtctgaagctccctggaggttccatggcaaAgctgacagtgacactgatggtgctgagctccccac  
15 tggctttggctgggacacccgaccacgttttgcagcaggataagtatgagtgtcatttcttcaacgggacgga  
gcgggtgcggttcctgcacagagacatctataaccaagaggaggacttgcgcctcgacagcgtggggagttac  
cggcggtgacggagctggggccctgacgctgagtaactggaacagccagaaggacttccctggaaagacaggcgc  
ccgcgggtggacacctactgcagacacaactacggggttgtagagcttcacagtgcagcggcag (SEQ ID  
NO: 3-7-5-2867) ;

20 DRB5\*010102 :

cacgtttcttcagcaggataagtatgagtgtcatttcttcaacgggacggagcgggtgcggttcctgcacagaga  
catctataaccaagaggaggacTtgcgcttcgacagcgacgtggggagtaccggcgtgacggagctggggcgg  
cctgacgcTgagtactggaacagccagaaggacTtcctggaaGaCaggcggccgcgtggacacctactgcagac  
acaactacggggttggtgagagcttcaca (SEQ ID NO: 3-7-6-2868) ;

25 DRB5\*0102 :

ggggacacccgaccacgtttcttCagcaggataagtatgagtgtcatttcttcaacgggacggagcgggtgcgt  
tcctgcacagaggcatctataaccaagaggagAacgtgcgcctcgacagcgacgtggggagttaccggcgtgac

ggagctggggcggcgtacgctgacttggaaacagccagaaggacTtcctggaaGacaggcgCggccgcgtggac  
acctactgcagacacaactacggggttggtgagagcttcacagtgcagcggcgag (SEQ ID NO:~~3-7-7~~  
2869) ;  
DRB5\*0103 ;  
5 ttgcacgcaggataagtatgagtgtcatttcttcaacgggacggagcgggtcggttcctgcacagaGcatctata  
accaagaggagaacgtgcgcgttgcacagcgacgtggggagttaccggcggtgacggagctggggggcctgacgc  
tgagtacttggaaacagccagaaggacttccttggaaagacaGcgCggccgcgtggacacctactgcagacacaactac  
ggggttggtgagagcttcacag (SEQ ID NO:~~3-7-8-2870~~) ;  
DRB5\*0104 ;  
10 ggggacacccgaccacgttcttcgcaggataagtatgagtgtcatttcttcaacgggacggagcgggtcggt  
tcctgcacagagacatctataaccaagaggaggacTtgcgcgttgcacagcgacgtggggagttaccggcggtgac  
ggagctggggcggcctgacgctgacttggaaacagccagaaggacttccttggaaagacaggcggccctggac  
acctactgcagacacaactacggggttggtgagagcttcacagtgcagcggcgag (SEQ ID NO:~~3-7-9~~  
2871) ;  
15 DRB5\*0105 :  
ccacgttcttcgcaggataagtatgagtgtcatttcttcaacgggacggagcgggtcggttcctgcacagag  
acatctataaccaagaggagGacgtgcgcgttgcacagcgacgtggggagttaccggcggtgacggagctgggccc  
gcctgacgctgagttacttggaaacagccagaaggacTtcctggaaGacaggcgCggccgcgtggacacctactgcaga  
cacaactacggggttggtgagagcttcacagtgcagcgg (SEQ ID NO:~~3-8-0-2872~~) ;  
20 DRB5\*0106 :  
cacgttcttcgcaggataagtatgagtgtcatttcttcaacgggacggagcgggtcggttcctgcacagaga  
catctataaccaagaggaggacTtgcgcgttgcacagcgacgtggggagttaccggcggtgacggagctgggccc  
cctgacgctgagttacttggaaacagccagaaggacatctggagcaggcgccggccgcgtggacacctactgcagac  
acaactacgggctgtGagagcttcacagtgcagcggcg (SEQ ID NO:~~3-8-1-2873~~) ;  
25 DRB5\*0107 :  
cacgttcttcgcaggataagtatgagtgtcatttcttcaacgggacggagcgggtcggttcctgcacagaga  
catctataaccaagaggaggacTtgcgcgttgcacagcgacgtggggagttaccggcggtgacggagctgggccc

cctgacgctgagtaactggAACAGCCAGAAGGACATcctggaaGacaggcgGccgcggtgacacctactgcagac

acaactacgggttggtg (SEQ ID N0:~~3-8-2-2874~~) ;

DRB5\*0109 :

cacgtttcttcagcaggataagtatgagtgtcatttcaacggacggagcgggtgcggttcctgcacagaga

5 catctataaccaagaggaggacttgcgccttcgacagcgacgtggggagttaccggcggtgacggagctgggcgg

cctgacgctgagtaactggAACAGCCAGAAGGACTTGGAAAcaggcgccgcggtgacacctactgcagac

acaactacgggttggtg (SEQ ID N0:~~3-8-3-2875~~) ;

DRB5\*0110N :

cacgtttcttcagcaggataagtatgagtgtcatttcaacggacggagcgggtgcggttcctgcacagagaG

10 catctataaccaagaggaggAACGTGCGCTTCGACAGCGACGTGGGGAGTTACCGGGCGGTGACGGAGCTGGGC

cctgacgctgagtaactggAACAGCCAGAAGGACTTGGAAAcaggcgGccgcggtgacacctactgcacagac

acaactacgggttggtgagagcttcacagtgcagcggcgag (SEQ ID N0:~~3-8-4-2876~~) ;

DRB5\*0111 :

cacgtttcttcagcaggataagtatgagtgtcatttcaacggacggagcgggtgcggttcctgcacagaga

15 catctataaccaagaggaggacttgcgccttcgacagcgacgtggggagttaccggcggtgacggagctgggcgg

cctgacgctgagtaactggAACAGCCAGAAGGACTTGGAAAcaggcgGccgcggtgacacctactgcagac

acaactacgggttggtgagagcttcacagtgcagcggcgag (SEQ ID N0:~~3-8-5-2877~~) ;

DRB5\*0112 :

cacgtttcttcagcaggataagtatgagtgtcatttcaacggacggagcgggtgcggttcctgcacagaga

20 catctataaccaagaggaggacttgcgccttcgacagcgacgtggggagttaccggcggtgacggagctgggcgg

cctgacgccgagtCctggAACAGCCAGAAGGACTTGGAGCAGGGGGAGTTACCGGGCGGTGACGGAGCTGGGC

acaactacgggttggtgagagcttcacagtgcagcggcgag (SEQ ID N0:~~3-8-6-2878~~) ;

DRB5\*0202 :

atggtgtgtctgaagctccctggaggttcctAcatggcagtgcacagtgcacactgatggtgctgagctccccac

25 tggcttggctggacacccgaccatgttcttcagcaggataagtatgagtgtcatttcaacggacgg

gcgggtgcggttcctgcacagaggcatctataaccaagaggagaacgtgcgcctcgacagcgacgtggggagttac

cgggcggtgacggagctgggcggcctgacgctgagtaactggAACAGCCAGAAGGACTTGGAAAcaggcgacatc

ccgcgggtggacacctactgcagacacaactacgggctgtGgagagcttcacagtgcagcggcgag (SEQ ID

NO: ~~3-8-72879~~) ;

DRB5\*0203 :

tttcttcagcaggataagtatgagtgtcatttcaacgggacggagcgggtgcggttcctgcacagaGgcac  
 5 tataaccaagaggagAacgtgcgccttcgacagcgacgtggggagttaccggcggtgacggagctggggcggcctg  
 acgctgagtactggaacagccagaaggacAtcctggagcagGCgcggccgcggtgacacactgcagacacaa  
 ctacggggtggtgagagcttcacagtgcagcgg (SEQ ID NO: ~~3-8-8-2880~~) ;

DRB5\*0204 :

catgtttcttcagcaggataagtatgagtgtcatttcaacgggacggagcgggtgcggttcctgcacagaGg  
 10 catctataaccaagaggagaacgtgcgccttcgacagcgacgtggggagttaccggcggtgacggagctgggcgg  
 cctgacgctgagtactggaacagccagaaggacTtcctggagcaggCgcggccgcggtgacacactgcagac  
 acaactacgggctgtGgagagcttcaca (SEQ ID NO: ~~3-8-9-2881~~) ;

DRB5\*0205 :

catgtttcttcagcaggataagtatgagtgtcatttcaacgggacggagcgggtgcggttcctgcacagaGg  
 15 catctataaccaagaggagAacgtgcgccttcgacagcgacgtggggagttaccggcggtgacggagctgggcgg  
 cctgacgctgagtactggaacagccagaaggacctcctggagcagaggcggccgcggtgacacactgcagac  
 acaactacgggctgtGgagagcttcacagtgcagcggcgag (SEQ ID NO: ~~3-9-0-2882~~)

In the following, Probe List DR1 and 2 are  
 20 shown in Tables 21-1 to 21-8 and Tables 22-1 to 22-7  
 respectively. Allele-Probe Lists 1 and 2 are shown  
 in Tables 23-1 to 23-13 and Tables 24-1 to 24-13  
 respectively.

Table 21-1

| <b>Probe<br/>No.</b> | <b>Base Sequence</b>                                     |
|----------------------|----------------------------------------------------------|
| 0                    | g gtg cgg ttg Ctg gaA ( SEQ ID No: 391 <u>2883</u> )     |
| 1                    | g Cgg ttg ctg gaa aga T ( SEQ ID No: 392 <u>2884</u> )   |
| 2                    | c tat aac caa gag gag tC ( SEQ ID No: 393 <u>2885</u> )  |
| 3                    | ctg ggg cgg cct gaT ( SEQ ID No: 394 <u>2886</u> )       |
| 4                    | ggg cgg cct gat gcC ( SEQ ID No: 395 <u>2887</u> )       |
| 5                    | cac aac tac ggg gtt gG ( SEQ ID No: 396 <u>2888</u> )    |
| 6                    | c atc tat aac caa gag gaA ( SEQ ID No: 397 <u>2889</u> ) |
| 7                    | c gcg gtg gac acc taT ( SEQ ID No: 398 <u>2890</u> )     |
| 8                    | ga cac aac tac ggg gC ( SEQ ID No: 399 <u>2891</u> )     |
| 9                    | ag agg cgg gcc gcC ( SEQ ID No: 400 <u>2892</u> )        |
| 10                   | g aac agc cag aag gac A ( SEQ ID No: 401 <u>2893</u> )   |
| 11                   | g gac atc ctg gaa gac G ( SEQ ID No: 402 <u>2894</u> )   |
| 12                   | gac atc ctg gaa gac gA ( SEQ ID No: 403 <u>2895</u> )    |
| 13                   | g gcc gcg gtg gac aaT ( SEQ ID No: 404 <u>2896</u> )     |
| 14                   | ac aac tac ggg gtt gtG ( SEQ ID No: 405 <u>2897</u> )    |
| 15                   | c ttc gac agc gac gtg A ( SEQ ID No: 406 <u>2898</u> )   |
| 16                   | c ctc ctg gag cag gC ( SEQ ID No: 407 <u>2899</u> )      |
| 17                   | ca cgt ttc ttg tgg G ( SEQ ID No: 408 <u>2900</u> )      |
| 18                   | tc tat aac caa gag gag tA ( SEQ ID No: 409 <u>2901</u> ) |
| 19                   | gac ctc ctg gag cag G ( SEQ ID No: 410 <u>2902</u> )     |
| 20                   | gac ctc ctg gag cag aA ( SEQ ID No: 411 <u>2903</u> )    |
| 21                   | g gag cgg gtg cgg tA ( SEQ ID No: 412 <u>2904</u> )      |
| 22                   | c ctg gac aga tac ttc C ( SEQ ID No: 413 <u>2905</u> )   |
| 23                   | c cat aac cag gag gag A ( SEQ ID No: 414 <u>2906</u> )   |
| 24                   | c cat aac cag gag gag aA ( SEQ ID No: 415 <u>2907</u> )  |
| 25                   | gc gac gtg ggg gag tT ( SEQ ID No: 416 <u>2908</u> )     |
| 26                   | G cag aag cgg ggc cG ( SEQ ID No: 417 <u>2909</u> )      |
| 27                   | G ggc cgg gtg gac aA ( SEQ ID No: 418 <u>2910</u> )      |
| 28                   | g ggc cgg gtg gac aaT ( SEQ ID No: 419 <u>2911</u> )     |
| 29                   | ca cgt ttc ttg gA ( SEQ ID No: 420 <u>2912</u> )         |
| 30                   | g gtg cgg ttc ctg gaG ( SEQ ID No: 421 <u>2913</u> )     |

Table 21-2

| <b>Probe No.</b> | <b>Base Sequence</b>                             |
|------------------|--------------------------------------------------|
| 31               | c ctg gag aga tac ttc C ( SEQ ID No: 4222914)    |
| 32               | c aga tac ttc cat aac caG ( SEQ ID No: 4232915)  |
| 33               | tt ggt gag agc ttc acG ( SEQ ID No: 4242916)     |
| 34               | g gtg cgg tac ctg gaC ( SEQ ID No: 4252917)      |
| 35               | g ggg cgg cct gat gA ( SEQ ID No: 4262918)       |
| 36               | ggg cgg cct gat gaG ( SEQ ID No: 4272919)        |
| 37               | c aga tac ttc cat aac cG ( SEQ ID No: 4282920)   |
| 38               | ctg ggg cgg cct gC ( SEQ ID No: 4292921)         |
| 39               | ag cag aag cgg ggc C ( SEQ ID No: 4302922)       |
| 40               | g cag aag cgg ggc cA ( SEQ ID No: 4312923)       |
| 41               | gg ggc cag gtg gac aA ( SEQ ID No: 4322924)      |
| 42               | ctg ggg cgg cct agC ( SEQ ID No: 4332925)        |
| 43               | gg cct gat gcc gag tC ( SEQ ID No: 4342926)      |
| 44               | gac gtg ggg gag ttc T ( SEQ ID No: 4352927)      |
| 45               | gt ttc ttg gag tac tct aC ( SEQ ID No: 4362928)  |
| 46               | g gtg cgg ttc ctg gaC ( SEQ ID No: 4372929)      |
| 47               | g tac cgg gcg gtg aG ( SEQ ID No: 4382930)       |
| 48               | g ggc cag gtg gac aaT ( SEQ ID No: 4392931)      |
| 49               | ttc gac agc gac gtg C ( SEQ ID No: 4402932)      |
| 50               | c cat aac cag gag gag tT ( SEQ ID No: 4412933)   |
| 51               | c ctg gac aga tac ttc G ( SEQ ID No: 4422934)    |
| 52               | c cat aac cag gag gag tA ( SEQ ID No: 4432935)   |
| 53               | atg gtg tgt ctg aag T ( SEQ ID No: 4442936)      |
| 54               | ga tac ttc tat cac caa gaA ( SEQ ID No: 4452937) |
| 55               | tc ttg gag cag gtt aaa C ( SEQ ID No: 4462938)   |
| 56               | c tat cac caa gag gag tA ( SEQ ID No: 4472939)   |
| 57               | g cag agg cgg gcc gA ( SEQ ID No: 4482940)       |
| 58               | ggg cgg cct gac gcT ( SEQ ID No: 4492941)        |
| 59               | c ttg gag cag gtt aaa cA ( SEQ ID No: 4502942)   |
| 60               | ctg gac aga tac ttc tat C ( SEQ ID No: 4512943)  |

Table 21-3

| <b>Probe No.</b> | <b>Base Sequence</b>                            |
|------------------|-------------------------------------------------|
| 61               | g ctg ggg cgg cct aG ( SEQ ID No: 4522944)      |
| 62               | a gag gag tac gtg cgG ( SEQ ID No: 4532945)     |
| 63               | gc ttc aca gtg cag cgA ( SEQ ID No: 4542946)    |
| 64               | c ctc ctg gag cag agA ( SEQ ID No: 4552947)     |
| 65               | t ttc ttg gag cag gtt aaA ( SEQ ID No: 4562948) |
| 66               | a gac agg cgg gcc cT ( SEQ ID No: 4572949)      |
| 67               | g aac agc cag aag gac T ( SEQ ID No: 4582950)   |
| 68               | ag gac ttc ctg gaa gaC ( SEQ ID No: 4592951)    |
| 69               | gg cgg cct gat gcc C ( SEQ ID No: 4602952)      |
| 70               | c ggg gtt gtg gag agA ( SEQ ID No: 4612953)     |
| 71               | g gac ctc ctg gag cG ( SEQ ID No: 4622954)      |
| 72               | ctg ggg cgg cct gat A ( SEQ ID No: 4632955)     |
| 73               | ag tac cgg gcg gtg aT ( SEQ ID No: 4642956)     |
| 74               | g ggg gag tac cgg gT ( SEQ ID No: 4652957)      |
| 75               | g cag agg cgg gcc C ( SEQ ID No: 4662958)       |
| 76               | g cag agg cgg gcc cT ( SEQ ID No: 4672959)      |
| 77               | tc ctg gag cag agg cA ( SEQ ID No: 4682960)     |
| 78               | caa gag gag tac gtg cA ( SEQ ID No: 4692961)    |
| 79               | c ttg gag cag gtt aaa cC ( SEQ ID No: 4702962)  |
| 80               | gac ctc ctg gaa gac G ( SEQ ID No: 4712963)     |
| 81               | gac ctc ctg gaa gac gA ( SEQ ID No: 4722964)    |
| 82               | gac atc ctg gag cag aA ( SEQ ID No: 4732965)    |
| 83               | agc gac gtg gaC ( SEQ ID No: 4742966)           |
| 84               | g ggg cgg cct gat gG ( SEQ ID No: 4752967)      |
| 85               | tc tat cac caa gag gag A ( SEQ ID No: 4762968)  |
| 86               | c tat cac caa gag gag aA ( SEQ ID No: 4772969)  |
| 87               | g gct ggg gac acc cA ( SEQ ID No: 4782970)      |
| 88               | g gac agg cgg ggc C ( SEQ ID No: 4792971)       |
| 89               | c cag gtg gac acc gtG ( SEQ ID No: 4802972)     |
| 90               | tc ctg tgg cag ggt aaaA ( SEQ ID No: 4812973)   |

Table 21-4

| <b>Probe No.</b> | <b>Base Sequence</b>                                    |
|------------------|---------------------------------------------------------|
| 91               | g gcg gtg acg gag ctA ( SEQ ID No: <u>4822974</u> )     |
| 92               | g cct gtc gcc gag tC ( SEQ ID No: <u>4832975</u> )      |
| 93               | gtg cag ttc ctg gaa agT ( SEQ ID No: <u>4842976</u> )   |
| 94               | ag tcc tgg aac agc cG ( SEQ ID No: <u>4852977</u> )     |
| 95               | gg cgg cct gct gcG ( SEQ ID No: <u>4862978</u> )        |
| 96               | gtg acg gag cta ggg T ( SEQ ID No: <u>4872979</u> )     |
| 97               | c tct acg ggt gag tgt T ( SEQ ID No: <u>4882980</u> )   |
| 98               | cgg ttc ctg gac aga taT ( SEQ ID No: <u>4892981</u> )   |
| 99               | gc tcc tgc atg gca gT ( SEQ ID No: <u>4902982</u> )     |
| 100              | g tac cgg gcg gtg acA ( SEQ ID No: <u>4912983</u> )     |
| 101              | cac aac tac ggg gtt gT ( SEQ ID No: <u>4922984</u> )    |
| 102              | gtt gtt gag agc ttc acG ( SEQ ID No: <u>4932985</u> )   |
| 103              | tt gtg gag agc ttc acG ( SEQ ID No: <u>4942986</u> )    |
| 104              | g ctg ggg cgg cct gT ( SEQ ID No: <u>4952987</u> )      |
| 105              | gg cct gct gcg gag C ( SEQ ID No: <u>4962988</u> )      |
| 106              | gt ttc ttg gag tac tct aG ( SEQ ID No: <u>4972989</u> ) |
| 107              | gg cct gat gcg gag C ( SEQ ID No: <u>4982990</u> )      |
| 108              | tc tat aac caa gag gag G ( SEQ ID No: <u>4992991</u> )  |
| 109              | ag gac atc ctg gaa gaC ( SEQ ID No: <u>5002992</u> )    |
| 110              | g ctg ggg cgg cct aT ( SEQ ID No: <u>5012993</u> )      |
| 111              | c ttg gag tac tct acg tC ( SEQ ID No: <u>5022994</u> )  |
| 112              | gt ttc ttg gag tac tct aT ( SEQ ID No: <u>5032995</u> ) |
| 113              | c aac tac ggg gct gtG ( SEQ ID No: <u>5042996</u> )     |
| 114              | ct gtg gag agc ttc acG ( SEQ ID No: <u>5052997</u> )    |
| 115              | g agc ttc aca gtg cag A ( SEQ ID No: <u>5062998</u> )   |
| 116              | ctg gag cgg agg cgT A ( SEQ ID No: <u>5072999</u> )     |
| 117              | g ttg ctg gaa aga cgc G ( SEQ ID No: <u>5083000</u> )   |
| 118              | ctg gag cgg agg cgC ( SEQ ID No: <u>5093001</u> )       |
| 119              | g aag gac ttc ctg gaa G ( SEQ ID No: <u>5103002</u> )   |
| 120              | g ctg gaa gac agg cgC ( SEQ ID No: <u>5113003</u> )     |

Table 21-5

| <b>Probe No.</b> | <b>Base Sequence</b>                                    |
|------------------|---------------------------------------------------------|
| 121              | t gag tgt cat ttc ttc aaC ( SEQ ID No: <u>5123004</u> ) |
| 122              | gac ttc ctg gaa gac gA ( SEQ ID No: <u>5133005</u> )    |
| 123              | c ttg gag tac tct acg G ( SEQ ID No: <u>5143006</u> )   |
| 124              | g gac ctc ctg gaa gaC ( SEQ ID No: <u>5153007</u> )     |
| 125              | g gac ttc ctg gaa gac G ( SEQ ID No: <u>5163008</u> )   |
| 126              | tc tat aac caa gag gag tT ( SEQ ID No: <u>5173009</u> ) |
| 127              | c aga tac ttc tat aac caG ( SEQ ID No: <u>5183010</u> ) |
| 128              | c tat aac cag gag gag tT ( SEQ ID No: <u>5193011</u> )  |
| 129              | at aac caa gag gag gac T ( SEQ ID No: <u>5203012</u> )  |
| 130              | cgg agg cggttgg gcc gA ( SEQ ID No: <u>5213013</u> )    |
| 131              | cc gag gtg gac acc taT ( SEQ ID No: <u>5223014</u> )    |
| 132              | aa gac agg cggttgg gcc C ( SEQ ID No: <u>5233015</u> )  |
| 133              | ttg gag tac tct acg tcC ( SEQ ID No: <u>5243016</u> )   |
| 134              | gag tac tct acg tct gaG ( SEQ ID No: <u>5253017</u> )   |
| 135              | cag aag gac ttc ctg gaA ( SEQ ID No: <u>5263018</u> )   |
| 136              | g gcc gcg gtg gag aA ( SEQ ID No: <u>5273019</u> )      |
| 137              | ttc tat aat caa gag gag A ( SEQ ID No: <u>5283020</u> ) |
| 138              | tc tat aac caa gag gag aA ( SEQ ID No: <u>5293021</u> ) |
| 139              | ca cgt ttc ttg gag cT ( SEQ ID No: <u>5303022</u> )     |
| 140              | cggttgg gcc gat gag gag C ( SEQ ID No: <u>5313023</u> ) |
| 141              | a gac agg cggttgg gcc gT ( SEQ ID No: <u>5323024</u> )  |
| 142              | g cggttgg gcc gat gag gaC ( SEQ ID No: <u>5333025</u> ) |
| 143              | g cggttgg gcc gat gag gG ( SEQ ID No: <u>5343026</u> )  |
| 144              | g ttc cggttgg gcc gtg aG ( SEQ ID No: <u>5353027</u> )  |
| 145              | gc tcc tgc atg gca gtT ( SEQ ID No: <u>5363028</u> )    |
| 146              | ttg gct ggg gac acc A ( SEQ ID No: <u>5373029</u> )     |
| 147              | g gag cggttgg gcc ttA ( SEQ ID No: <u>5383030</u> )     |
| 148              | c cat aac cag gag gag C ( SEQ ID No: <u>5393031</u> )   |
| 149              | cag aag gac atc ctg gG ( SEQ ID No: <u>5403032</u> )    |
| 150              | gag cggttgg gcc ttC ( SEQ ID No: <u>5413033</u> )       |

Table 21-6

| <b>Probe No.</b> | <b>Base Sequence</b>                                    |
|------------------|---------------------------------------------------------|
| 151              | g gaa gac gag cg <sup>g</sup> gcT ( SEQ ID No: 5423034) |
| 152              | c ctg gaa gac gag cGc ( SEQ ID No: 5433035)             |
| 153              | g gac atc ctg gaa gac aA ( SEQ ID No: 5443036)          |
| 154              | a cgt ttc ttg gag tac tC ( SEQ ID No: 5453037)          |
| 155              | gg ttc ctg gac aga tac T ( SEQ ID No: 5463038)          |
| 156              | at atc ctg gag cag gC ( SEQ ID No: 5473039)             |
| 157              | cac aac tat ggg gtt gA ( SEQ ID No: 5483040)            |
| 158              | g aga tac ttc cat aat caG ( SEQ ID No: 5493041)         |
| 159              | c tgc aga cac aac tac C ( SEQ ID No: 5503042)           |
| 160              | t aac cag gag gag aac C ( SEQ ID No: 5513043)           |
| 161              | ac gtg ggg gag ttc cT ( SEQ ID No: 5523044)             |
| 162              | ctg ggg cgg cct gtC ( SEQ ID No: 5533045)               |
| 163              | gg gag ttc cgg gcg T ( SEQ ID No: 5543046)              |
| 164              | ca cgt ttc ttg gag tac T ( SEQ ID No: 5553047)          |
| 165              | tct acg tct gag tgt caA ( SEQ ID No: 5563048)           |
| 166              | ggg cgg cct gat gcT ( SEQ ID No: 5573049)               |
| 167              | t ttc ttg gag tac tct aC ( SEQ ID No: 5583050)          |
| 168              | gac atc ctg gag cag G ( SEQ ID No: 5593051)             |
| 169              | g acg gag cgg gtg CA ( SEQ ID No: 5603052)              |
| 170              | g gcc gag gtg gac aaT ( SEQ ID No: 5613053)             |
| 171              | ttg gag tac cct acg tC ( SEQ ID No: 5623054)            |
| 172              | t aac cag gag gag ttc C ( SEQ ID No: 5633055)           |
| 173              | gg gcc gag gtg gac G ( SEQ ID No: 5643056)              |
| 174              | c tcc cca ctg gct ttg T ( SEQ ID No: 5653057)           |
| 175              | gc aga cac aac tat ggA ( SEQ ID No: 5663058)            |
| 176              | cac aac tac gga gtt gtG ( SEQ ID No: 5673059)           |
| 177              | g tgg cag cct aag agG ( SEQ ID No: 5683060)             |
| 178              | tg gac aga tac ttc tat aaT ( SEQ ID No: 5693061)        |
| 179              | cgg ttc ctg gac aga C ( SEQ ID No: 5703062)             |
| 180              | ac ttc ctg gag cag gC ( SEQ ID No: 5713063)             |

Table 21-7

| <b>Probe No.</b> | <b>Base Sequence</b>                             |
|------------------|--------------------------------------------------|
| 181              | g gag ttc cgg gcg gC ( SEQ ID No: 5723064)       |
| 182              | c tgg aac agc tag aag A ( SEQ ID No: 5733065)    |
| 183              | ac gtg ggg gag ttc cA ( SEQ ID No: 5743066)      |
| 184              | c tgg aac agc ca ggg gac A ( SEQ ID No: 5753067) |
| 185              | tc ctg gaa gac agg gC ( SEQ ID No: 5763068)      |
| 186              | g cgg gtg cgg ttc cC ( SEQ ID No: 5773069)       |
| 187              | c tat aac cag gag gag aA ( SEQ ID No: 5783070)   |
| 188              | cgt ttc ttg gag ctg cG ( SEQ ID No: 5793071)     |
| 189              | c tcc cga ctg gct ttC ( SEQ ID No: 5803072)      |
| 190              | ca cgt ttc ttg gag ctg T ( SEQ ID No: 5813073)   |
| 191              | cgt ttc ttg gag ctg tG ( SEQ ID No: 5823074)     |
| 192              | g gtg cgg tac ctg gaG ( SEQ ID No: 5833075)      |
| 193              | gt ttc tcg gag ctg cG ( SEQ ID No: 5843076)      |
| 194              | cggt gtg cgg tat ctg A ( SEQ ID No: 5853077)     |
| 195              | ac cag gag gag tac gC ( SEQ ID No: 5863078)      |
| 196              | c cag gag gag ttc ctg A ( SEQ ID No: 5873079)    |
| 197              | ca cgt ttc ttg G ( SEQ ID No: 5883080)           |
| 198              | cgg ttc ctg gag aga C ( SEQ ID No: 5893081)      |
| 199              | gtg gac aat tac tgc agG ( SEQ ID No: 5903082)    |
| 200              | ggg cgg cct gat gcG ( SEQ ID No: 5913083)        |
| 201              | aga cac ttc cat aac caG ( SEQ ID No: 5923084)    |
| 202              | ac cag gag gag aac gC ( SEQ ID No: 5933085)      |
| 203              | g gag cgg gtg cgg C ( SEQ ID No: 5943086)        |
| 204              | cac aac tac ggg gtt gC ( SEQ ID No: 5953087)     |
| 205              | gc aga cac aac tac ggC ( SEQ ID No: 5963088)     |
| 206              | g ctg aca gtg aca ttg aC ( SEQ ID No: 5973089)   |
| 207              | cgg gcc gag gtg gG ( SEQ ID No: 5983090)         |
| 208              | ag tgt gag tgt cat ttc C ( SEQ ID No: 5993091)   |
| 209              | g gag cga gtg tgg aaC ( SEQ ID No: 6003092)      |
| 210              | g gac acc tac tgc aga T ( SEQ ID No: 6013093)    |

Table 21-8

| <b>Probe No.</b> | <b>Base Sequence</b>                                    |
|------------------|---------------------------------------------------------|
| 211              | cg cgc tac aac agt gaT ( SEQ ID No: 602 <u>3094</u> )   |
| 212              | gg gcc gag gtg gac aA ( SEQ ID No: 603 <u>3095</u> )    |
| 213              | tg gac aac tac tgc aga T ( SEQ ID No: 604 <u>3096</u> ) |
| 214              | acg gag cga gtg tgg A ( SEQ ID No: 605 <u>3097</u> )    |
| 215              | a ggt tcc tac atg gca aA ( SEQ ID No: 606 <u>3098</u> ) |
| 216              | ca cgt ttc ttg C ( SEQ ID No: 607 <u>3099</u> )         |
| 217              | atc tat aaccaa gag gag A ( SEQ ID No: 608 <u>3100</u> ) |
| 218              | cgg ttc ctg cac aga G ( SEQ ID No: 609 <u>3101</u> )    |
| 219              | gac ttc ctg gaa gac aC ( SEQ ID No: 610 <u>3102</u> )   |
| 220              | c ctg gaa gac acg cgC ( SEQ ID No: 611 <u>3103</u> )    |
| 221              | g aag gac atc ctg gaa G ( SEQ ID No: 612 <u>3104</u> )  |
| 222              | ag aag gac ttc ctg gaa A ( SEQ ID No: 613 <u>3105</u> ) |
| 223              | g cct gac gcc gag tC ( SEQ ID No: 614 <u>3106</u> )     |
| 224              | ag gac ttc ctg gag cG ( SEQ ID No: 615 <u>3107</u> )    |
| 225              | c gag gtg gac acc gtG ( SEQ ID No: 616 <u>3108</u> )    |
| 226              | ctc cct gga ggt tcc tA ( SEQ ID No: 617 <u>3109</u> )   |

Table 22-1

| <b>Probe No.</b> | <b>Base Sequence</b>                                    |
|------------------|---------------------------------------------------------|
| 0                | g ttg ctg gaA aga tgc at ( SEQ ID No: <u>6183110</u> )  |
| 1                | ctg gaa aga Tgc atc tat a ( SEQ ID No: <u>6193111</u> ) |
| 2                | gag gag tCc gtg cgc ( SEQ ID No: <u>6203112</u> )       |
| 3                | cgg cct gaT gcc gag ( SEQ ID No: <u>6213113</u> )       |
| 4                | cct gat gcC gag tac tg ( SEQ ID No: <u>6223114</u> )    |
| 5                | c ggg gtt gGt gag agc ( SEQ ID No: <u>6233115</u> )     |
| 6                | caa gag gaA tcc gtg cg ( SEQ ID No: <u>6243116</u> )    |
| 7                | g gac acc taT tgc aga ca ( SEQ ID No: <u>6253117</u> )  |
| 8                | c tac ggg gCt gtg gag ( SEQ ID No: <u>6263118</u> )     |
| 9                | gg gcc gcC gtg gac ( SEQ ID No: <u>6273119</u> )        |
| 10               | cag aag gac Atc ctg gaa ( SEQ ID No: <u>6283120</u> )   |
| 11               | g gaa gac Gag cgg gc ( SEQ ID No: <u>6293121</u> )      |
| 12               | gaa gac gAg cgg gcc ( SEQ ID No: <u>6303122</u> )       |
| 13               | g gtg gac aaT tac tgc ag ( SEQ ID No: <u>6313123</u> )  |
| 14               | ggg gtt gtG gag agc t ( SEQ ID No: <u>6323124</u> )     |
| 15               | c gac gtg Agg gag tac ( SEQ ID No: <u>6333125</u> )     |
| 16               | gag cag gCg cgg gc ( SEQ ID No: <u>6343126</u> )        |
| 17               | ttc ttg tgg Gag ctt aag ( SEQ ID No: <u>6353127</u> )   |
| 18               | a gag gag tAc gtg cgc ( SEQ ID No: <u>6363128</u> )     |
| 19               | gag cag Gcg cgg gc ( SEQ ID No: <u>6373129</u> )        |
| 20               | gag cag aAg cgg gcc ( SEQ ID No: <u>6383130</u> )       |
| 21               | xc acc Aga c ( SEQ ID No: <u>6393131</u> )              |
| 22               | g gtg cgg tAc ctg gac ( SEQ ID No: <u>6403132</u> )     |
| 23               | g gtg gac aAc tac tgc a ( SEQ ID No: <u>6413133</u> )   |
| 24               | cgg ggc cGg gtg ga ( SEQ ID No: <u>6423134</u> )        |
| 25               | g ttc ctg gaG aga tac tt ( SEQ ID No: <u>6433135</u> )  |
| 26               | aga tac ttc Cat aac cag g ( SEQ ID No: <u>6443136</u> ) |
| 27               | g gag gag Aac gtg cgc ( SEQ ID No: <u>6453137</u> )     |
| 28               | g gag gag aAc gtg cgc ( SEQ ID No: <u>6463138</u> )     |
| 29               | cat aac caG gag gag tc ( SEQ ID No: <u>6473139</u> )    |
| 30               | ggg gag tTc cgg gcg ( SEQ ID No: <u>6483140</u> )       |

Table 22-2

| <b>Probe No.</b> | <b>Base Sequence</b>                                     |
|------------------|----------------------------------------------------------|
| 31               | agc ttc acG gtg cag c ( SEQ ID No: 649 <u>3141</u> )     |
| 32               | g tac ctg gaC aga tac tt ( SEQ ID No: 650 <u>3142</u> )  |
| 33               | g cct gat gAg gag tac t ( SEQ ID No: 651 <u>3143</u> )   |
| 34               | cct gat gaG gag tac tg ( SEQ ID No: 652 <u>3144</u> )    |
| 35               | c cat aac cGg gag gag ( SEQ ID No: 653 <u>3145</u> )     |
| 36               | cgG cct gCt gcg gag ( SEQ ID No: 654 <u>3146</u> )       |
| 37               | g cgG ggc Cag cta ga ( SEQ ID No: 655 <u>3147</u> )      |
| 38               | cgG ggc cAg gtg gac ( SEQ ID No: 656 <u>3148</u> )       |
| 39               | cgG cct aGc gcc gag ( SEQ ID No: 657 <u>3149</u> )       |
| 40               | cgG cct agC gcc gag ( SEQ ID No: 658 <u>3150</u> )       |
| 41               | t gcc gag tCc tgg aac ( SEQ ID No: 659 <u>3151</u> )     |
| 42               | g gag ttc Tgg gcg gtg ( SEQ ID No: 660 <u>3152</u> )     |
| 43               | ag tac tct aCg tct gag t ( SEQ ID No: 661 <u>3153</u> )  |
| 44               | g ttc ctg gaC aga tac tt ( SEQ ID No: 662 <u>3154</u> )  |
| 45               | gCG gtG aGg gag ctG ( SEQ ID No: 663 <u>3155</u> )       |
| 46               | c gac gtG Cgg gag ttc ( SEQ ID No: 664 <u>3156</u> )     |
| 47               | ag aag gac Atc ctG gag ( SEQ ID No: 665 <u>3157</u> )    |
| 48               | g gag gag tTc gtG cgc ( SEQ ID No: 666 <u>3158</u> )     |
| 49               | aga tac ttc Gat aac cag g ( SEQ ID No: 667 <u>3159</u> ) |
| 50               | c cat aac caG gag gag ta ( SEQ ID No: 668 <u>3160</u> )  |
| 51               | g gag gag tAc gtG cgc ( SEQ ID No: 669 <u>3161</u> )     |
| 52               | gt ctG aag Ttc cct gga ( SEQ ID No: 670 <u>3162</u> )    |
| 53               | t cac caa gaA gag tac gt ( SEQ ID No: 671 <u>3163</u> )  |
| 54               | cag gtt aaa Cat gag tgt c ( SEQ ID No: 672 <u>3164</u> ) |
| 55               | cgG gcc gAg gtG gac ( SEQ ID No: 673 <u>3165</u> )       |
| 56               | cct gac gcT gag tac tg ( SEQ ID No: 674 <u>3166</u> )    |
| 57               | ag gtt aaa cAt gag tgt ca ( SEQ ID No: 675 <u>3167</u> ) |
| 58               | tac ttc tat Cac caa gag g ( SEQ ID No: 676 <u>3168</u> ) |
| 59               | tac gtG cgG ttc gac ag ( SEQ ID No: 677 <u>3169</u> )    |
| 60               | gg cag agA cgG gcc ( SEQ ID No: 678 <u>3170</u> )        |

Table 22-3

| <b>Probe No.</b> | <b>Base Sequence</b>                                     |
|------------------|----------------------------------------------------------|
| 61               | g cag gtt aaA cat gag tg ( SEQ ID No: <u>6793171</u> )   |
| 62               | cgG gcc cTg gtG gac ( SEQ ID No: <u>6803172</u> )        |
| 63               | cag aag gac Ttc ctG gaa ( SEQ ID No: <u>6813173</u> )    |
| 64               | ctG gaa gaC agg cgg g ( SEQ ID No: <u>6823174</u> )      |
| 65               | ct gat gcc Cag tac tgg ( SEQ ID No: <u>6833175</u> )     |
| 66               | t gtG gag agA ttc aca gt ( SEQ ID No: <u>6843176</u> )   |
| 67               | ctg gag cGg agg cgg ( SEQ ID No: <u>6853177</u> )        |
| 68               | g cgg gcc Ctg gtG ga ( SEQ ID No: <u>6863178</u> )       |
| 69               | gg cct gat Acc gag tac ( SEQ ID No: <u>6873179</u> )     |
| 70               | g gcg gtG aTg gag ctG ( SEQ ID No: <u>6883180</u> )      |
| 71               | g tac cgg gTg gtG acg ( SEQ ID No: <u>6893181</u> )      |
| 72               | cag agg cAg gcc gcg ( SEQ ID No: <u>6903182</u> )        |
| 73               | g tac gtG cAc ttc gac a ( SEQ ID No: <u>6913183</u> )    |
| 74               | cag gtt aaa Cct gag tgt ( SEQ ID No: <u>6923184</u> )    |
| 75               | ag gtt aaa cCt gag tgt c ( SEQ ID No: <u>6933185</u> )   |
| 76               | gtG ggg gaC tac cgg ( SEQ ID No: <u>6943186</u> )        |
| 77               | g cct gat gGc gag tac ( SEQ ID No: <u>6953187</u> )      |
| 78               | a gag gag Aac gtG cgc ( SEQ ID No: <u>6963188</u> )      |
| 79               | a gag gag aAc gtG cgc ( SEQ ID No: <u>6973189</u> )      |
| 80               | xacc cAa c ( SEQ ID No: <u>6983190</u> )                 |
| 81               | gac acc gtG tgc aga c ( SEQ ID No: <u>6993191</u> )      |
| 82               | g cag ggt aaA tat aag tgt ( SEQ ID No: <u>7003192</u> )  |
| 83               | acg gag ctA ggg cgg ( SEQ ID No: <u>7013193</u> )        |
| 84               | c gcc gag tCc tgg aac ( SEQ ID No: <u>7023194</u> )      |
| 85               | c ctG gaa agT ctc ttc ta ( SEQ ID No: <u>7033195</u> )   |
| 86               | g aac agc cGg aag gac ( SEQ ID No: <u>7043196</u> )      |
| 87               | cct gct gcG gag tac t ( SEQ ID No: <u>7053197</u> )      |
| 88               | g cta ggg Tgg cct gtc ( SEQ ID No: <u>7063198</u> )      |
| 89               | ggt gag tgt Tat ttc ttc a ( SEQ ID No: <u>7073199</u> )  |
| 90               | tg gac aga taT ttc tat aac ( SEQ ID No: <u>7083200</u> ) |

Table 22-4

| <b>Probe No.</b> | <b>Base Sequence</b>                                    |
|------------------|---------------------------------------------------------|
| 91               | g tgt ctg aGg ctc cct ( SEQ ID No: <u>7093201</u> )     |
| 92               | gcg gtg acA gag ctg g ( SEQ ID No: <u>7103202</u> )     |
| 93               | c ggg gtt gTt gag agc ( SEQ ID No: <u>7113203</u> )     |
| 94               | cgG cct gTt gcc gag ( SEQ ID No: <u>7123204</u> )       |
| 95               | t gcg gag Cac tgg aac ( SEQ ID No: <u>7133205</u> )     |
| 96               | g tac tct aCg ggt gag t ( SEQ ID No: <u>7143206</u> )   |
| 97               | cgG cct gCt gcc gag ( SEQ ID No: <u>7153207</u> )       |
| 98               | g tac tct aGg ggt gag t ( SEQ ID No: <u>7163208</u> )   |
| 99               | a gag gag Gac gtG cgc ( SEQ ID No: <u>7173209</u> )     |
| 100              | cgG cct aTc gcc gag ( SEQ ID No: <u>7183210</u> )       |
| 101              | c tct acg tCt gag tgt c ( SEQ ID No: <u>7193211</u> )   |
| 102              | ag tac tct aTg ggt gag t ( SEQ ID No: <u>7203212</u> )  |
| 103              | ggG gct gtG gag agc ( SEQ ID No: <u>7213213</u> )       |
| 104              | gtG cgg taT ctG cac ag ( SEQ ID No: <u>7223214</u> )    |
| 105              | gg agg cgT gcc gcg ( SEQ ID No: <u>7233215</u> )        |
| 106              | gaa aga cgc Gtc cat aac ( SEQ ID No: <u>7243216</u> )   |
| 107              | gg agg cgC gcc gcg ( SEQ ID No: <u>7253217</u> )        |
| 108              | c ctG gaa Gac agg cgc ( SEQ ID No: <u>7263218</u> )     |
| 109              | ctG gaa gaC agg cgc g ( SEQ ID No: <u>7273219</u> )     |
| 110              | ac agg cgC gcc gcg ( SEQ ID No: <u>7283220</u> )        |
| 111              | ttc ttc aaC ggg acg ga ( SEQ ID No: <u>7293221</u> )    |
| 112              | ac tct acg Ggt gag tgt ( SEQ ID No: <u>7303222</u> )    |
| 113              | c cat aac caG gag gag aa ( SEQ ID No: <u>7313223</u> )  |
| 114              | c cat aac caG gag gag tt ( SEQ ID No: <u>7323224</u> )  |
| 115              | a gag gag tCt gtG cgc ( SEQ ID No: <u>7333225</u> )     |
| 116              | c tat aac caG gag gag tt ( SEQ ID No: <u>7343226</u> )  |
| 117              | g gag gac Ttg cgc ttc ( SEQ ID No: <u>7353227</u> )     |
| 118              | c ctG gaa Gac agg cgg ( SEQ ID No: <u>7363228</u> )     |
| 119              | t acg tct gaG tgt cat ttc ( SEQ ID No: <u>7373229</u> ) |
| 120              | ttc ctG gaA gac agg cg ( SEQ ID No: <u>7383230</u> )    |

Table 22-5

| <b>Probe No.</b> | <b>Base Sequence</b>       |
|------------------|----------------------------|
| 121              | tc ttg gag cTg ctt aag t   |
| 122              | g cct gat gAg gag cac      |
| 123              | at gag gag Cac tgg aac     |
| 124              | cgG gcc gTg gtg gac        |
| 125              | t gat gag gaC tac tgg aa   |
| 126              | t gat gag gGg tat tgg a    |
| 127              | c atg gca gtT ctg aca gt   |
| 128              | gtg cgg ttA ctg gag ag     |
| 129              | g gag gag Ctc ctg cg       |
| 130              | c atc ctg gGa gac agg      |
| 131              | gtg cgg ttC ctg gag a      |
| 132              | gag cgg gcT gcg gtg        |
| 133              | gaa gac gAg cgc gcc        |
| 134              | ac gag cgC gcc gcg         |
| 135              | ctg gaa gaC aag cgg g      |
| 136              | g gaa gac aAg cgg gcc      |
| 137              | g gag tac tCt acg tct g    |
| 138              | gac aga tac Ttc tat aac c  |
| 139              | c ggg gtt gAt gag agc      |
| 140              | ac aac tac Cgg gtt gtg     |
| 141              | cgG cct gTc gcc gag        |
| 142              | g gag aac CtG cgc ttc      |
| 143              | g gag ttc cTg gcg gtg      |
| 144              | cgG cct gtC gcc gag        |
| 145              | c cgg gcg Ttg acg ga       |
| 146              | ttg gag tac Tct acg tct    |
| 147              | ct gag tgt caA ttc ttc aat |
| 148              | cct gat gcT gag tac tg     |
| 149              | gt ttc ttg gAg tac tct ac  |
| 150              | g cgg gtg cAg ttc ctg      |

Table 22-6

| <b>Probe No.</b> | <b>Base Sequence</b>                                    |
|------------------|---------------------------------------------------------|
| 151              | c gac gtg Cgg gag tac ( SEQ ID No: <u>7693261</u> )     |
| 152              | c cct acg tCt gag tgt c ( SEQ ID No: <u>7703262</u> )   |
| 153              | g gag gag tTc ctg cgc ( SEQ ID No: <u>7713263</u> )     |
| 154              | g gag ttc CtG cgc ttc ( SEQ ID No: <u>7723264</u> )     |
| 155              | g gtg gac Gcc tat tgc ( SEQ ID No: <u>7733265</u> )     |
| 156              | g gct ttg Tct ggg gac ( SEQ ID No: <u>7743266</u> )     |
| 157              | c aac tac ggA gtt gtg ga ( SEQ ID No: <u>7753267</u> )  |
| 158              | gga gtt gtG gag agc tt ( SEQ ID No: <u>7763268</u> )    |
| 159              | cct aag agG gag tgt ca ( SEQ ID No: <u>7773269</u> )    |
| 160              | c ttc tat aaT cag gag gag ( SEQ ID No: <u>7783270</u> ) |
| 161              | ctg gac aga Cac ttc tat ( SEQ ID No: <u>7793271</u> )   |
| 162              | ag aag gac Ttc ctg gag ( SEQ ID No: <u>7803272</u> )    |
| 163              | cgG gcg gCg acg ga ( SEQ ID No: <u>7813273</u> )        |
| 164              | gc cag aag Aac atc ctg ( SEQ ID No: <u>7823274</u> )    |
| 165              | g gag ttc cAg gcg gtg ( SEQ ID No: <u>7833275</u> )     |
| 166              | caa gg gac Atc ctg gag c ( SEQ ID No: <u>7843276</u> )  |
| 167              | gac agg gCc gcc gc ( SEQ ID No: <u>7853277</u> )        |
| 168              | g cgg ttc cCg gac aga ( SEQ ID No: <u>7863278</u> )     |
| 169              | g gag ctg cGt aag tct g ( SEQ ID No: <u>7873279</u> )   |
| 170              | ctg gct ttC gct ggg g ( SEQ ID No: <u>7883280</u> )     |
| 171              | ttg gag ctg Tgt aag tct ( SEQ ID No: <u>7893281</u> )   |
| 172              | g gag ctg tGt aag tct g ( SEQ ID No: <u>7903282</u> )   |
| 173              | g tac ctg gaG aga tac tt ( SEQ ID No: <u>7913283</u> )  |
| 174              | cgG tac ctg Aac aga tac ( SEQ ID No: <u>7923284</u> )   |
| 175              | gag cag aAg cgG ggc ( SEQ ID No: <u>7933285</u> )       |
| 176              | g gag tac gCg cgc ttc ( SEQ ID No: <u>7943286</u> )     |
| 177              | ag ttc ctg Agc ttc gac ( SEQ ID No: <u>7953287</u> )    |
| 178              | cgt ttc ttG Gag ctg ctt ( SEQ ID No: <u>7963288</u> )   |
| 179              | ctg gag aga Cac ttc cat ( SEQ ID No: <u>7973289</u> )   |
| 180              | t tac tgc agG cac aac ta ( SEQ ID No: <u>7983290</u> )  |

Table 22-7

| <b>Probe No.</b> | <b>Base Sequence</b>                                    |
|------------------|---------------------------------------------------------|
| 181              | cct gat gcG gag tac tg ( SEQ ID No: <u>7993291</u> )    |
| 182              | g gag gag Aac gcg cg ( SEQ ID No: <u>8003292</u> )      |
| 183              | g gag aac gCg cgc ttc ( SEQ ID No: <u>8013293</u> )     |
| 184              | cgt ttc ttg Cag ctg ctt ( SEQ ID No: <u>8023294</u> )   |
| 185              | g gtg cgg Ctc ctg ga ( SEQ ID No: <u>8033295</u> )      |
| 186              | c ggg gtt gCt gag agc ( SEQ ID No: <u>8043296</u> )     |
| 187              | aac tac ggC gtt gtg ga ( SEQ ID No: <u>8053297</u> )    |
| 188              | g aca ttg aCg gtg ctg a ( SEQ ID No: <u>8063298</u> )   |
| 189              | c gag gtg gGc acc tac ( SEQ ID No: <u>8073299</u> )     |
| 190              | gtg tgg aaC ctg atc ag ( SEQ ID No: <u>8083300</u> )    |
| 191              | g gac acc taT tgc aga ta ( SEQ ID No: <u>8093301</u> )  |
| 192              | aac agt gaT ctg ggg ga ( SEQ ID No: <u>8103302</u> )    |
| 193              | tac tgc aga Tac aac tac g ( SEQ ID No: <u>8113303</u> ) |
| 194              | tgt cat ttc Ctc aat ggg ( SEQ ID No: <u>8123304</u> )   |
| 195              | ga gtg tgg Aac ctg atc ( SEQ ID No: <u>8133305</u> )    |
| 196              | c atg gca aAg ctg aca g ( SEQ ID No: <u>8143306</u> )   |
| 197              | cgt ttc ttg Cag cag gat ( SEQ ID No: <u>8153307</u> )   |
| 198              | ctg cac aga Ggc atc tat ( SEQ ID No: <u>8163308</u> )   |
| 199              | gaa gac aCg cgc gcc ( SEQ ID No: <u>8173309</u> )       |
| 200              | ac acg cgC gcc gcg ( SEQ ID No: <u>8183310</u> )        |
| 201              | c ctg gaa Aac agg cgc ( SEQ ID No: <u>8193311</u> )     |
| 202              | a ggt tcc tAc atg gca g ( SEQ ID No: <u>8203312</u> )   |
| 203              | tgt ttc ttg Cag cag gat ( SEQ ID No: <u>8213313</u> )   |

**Table 23-1**

| Allele Number | Probe Number for Detection |    |    |    |    |    |    |
|---------------|----------------------------|----|----|----|----|----|----|
|               | 2                          | 3  | 4  | 5  | 6  | 7  | 8  |
| DRB1*010101   | 0                          |    |    |    |    |    |    |
| DRB1*010102   | 6                          |    |    |    |    |    |    |
| DRB1*010201   | 7                          | 8  |    |    |    |    |    |
| DRB1*010202   | 9                          |    |    |    |    |    |    |
| DRB1*0103     | 10                         | 11 | 12 |    |    |    |    |
| DRB1*0104     | 13                         | 14 |    |    |    |    |    |
| DRB1*0105     | 15                         |    |    |    |    |    |    |
| DRB1*0106     | 16                         | 14 |    |    |    |    |    |
| DRB1*0107     | 17                         |    |    |    |    |    |    |
| DRB1*0108     | 18                         |    |    |    |    |    |    |
| DRB1*0109     | 19                         | 16 |    |    |    |    |    |
| DRB1*0110     | 20                         |    |    |    |    |    |    |
| DRB1*030101   | 21                         | 22 | 23 | 24 | 25 | 26 | 27 |
| DRB1*030102   | 26                         | 28 | 14 |    |    |    |    |
| DRB1*030201   | 29                         | 30 | 31 | 23 | 24 | 26 | 27 |
| DRB1*030202   | 30                         | 23 | 24 | 26 | 28 |    |    |
| DRB1*0303     | 30                         | 31 | 23 | 24 | 26 | 27 | 14 |
| DRB1*0304     | 21                         | 22 | 32 | 25 | 26 | 27 | 14 |
| DRB1*030501   | 21                         | 22 | 23 | 24 | 25 | 26 | 27 |
| DRB1*030502   | 27                         | 33 |    |    |    |    |    |
| DRB1*0306     | 21                         | 34 | 22 | 23 | 24 | 26 | 27 |
| DRB1*0307     | 22                         | 23 | 24 | 25 | 26 | 27 | 14 |
| DRB1*0308     | 23                         | 35 | 36 | 26 | 27 | 14 |    |
| DRB1*0309     | 37                         |    |    |    |    |    |    |
| DRB1*0310     | 38                         | 26 | 27 | 14 |    |    |    |
| DRB1*0311     | 21                         | 39 | 40 | 41 | 14 |    |    |
| DRB1*0312     | 42                         | 26 | 27 | 14 |    |    |    |
| DRB1*0313     | 43                         | 26 | 27 | 14 |    |    |    |
| DRB1*0314     | 21                         | 22 | 23 | 24 | 25 | 26 |    |
| DRB1*0315     | 21                         | 22 | 23 | 24 | 25 | 26 | 14 |

**Table 23-2**

| Allele Number | Probe Number for Detection |    |    |    |    |    |
|---------------|----------------------------|----|----|----|----|----|
| DRB1*0316     | 44                         |    |    |    |    |    |
| DRB1*0317     | 45                         | 46 | 18 | 47 | 48 |    |
| DRB1*0318     | 49                         | 14 |    |    |    |    |
| DRB1*0319     | 10                         | 26 | 27 | 14 |    |    |
| DRB1*0320     | 27                         | 8  |    |    |    |    |
| DRB1*0321     | 50                         | 25 | 26 | 27 | 14 |    |
| DRB1*0322     | 51                         |    |    |    |    |    |
| DRB1*0323     | 37                         | 14 |    |    |    |    |
| DRB1*0324     | 25                         | 39 | 40 | 48 | 14 |    |
| DRB1*0325     | 21                         | 22 | 32 | 52 | 25 | 26 |
| DRB1*040101   | 53                         | 20 |    |    |    |    |
| DRB1*040102   | 54                         |    |    |    |    |    |
| DRB1*0402     | 53                         | 12 | 14 |    |    |    |
| DRB1*040301   | 55                         | 56 | 57 | 14 |    |    |
| DRB1*040302   | 55                         | 58 | 57 | 14 |    |    |
| DRB1*0404     | 53                         | 14 |    |    |    |    |
| DRB1*040501   | 55                         | 59 | 60 | 56 | 61 |    |
| DRB1*040502   | 62                         |    |    |    |    |    |
| DRB1*040503   | 63                         |    |    |    |    |    |
| DRB1*040504   | 60                         | 42 | 33 |    |    |    |
| DRB1*0406     | 55                         | 60 | 57 | 14 |    |    |
| DRB1*040701   | 55                         | 56 | 57 |    |    |    |
| DRB1*040702   | 64                         |    |    |    |    |    |
| DRB1*0408     | 65                         | 55 | 59 | 60 | 56 |    |
| DRB1*0409     | 60                         | 61 | 20 |    |    |    |
| DRB1*0410     | 60                         | 56 | 61 | 14 |    |    |
| DRB1*0411     | 53                         | 57 | 14 |    |    |    |
| DRB1*0412     | 60                         | 61 | 10 | 66 | 14 |    |
| DRB1*0413     | 60                         | 20 | 14 |    |    |    |
| DRB1*0414     | 60                         | 10 | 11 | 12 |    |    |

**Table 23-3**

| Allele Number | Probe Number for Detection |    |    |    |    |
|---------------|----------------------------|----|----|----|----|
| DRB1*0415     | 55                         | 36 | 67 | 68 | 14 |
| DRB1*0416     | 69                         |    |    |    |    |
| DRB1*0417     | 60                         | 61 | 57 |    |    |
| DRB1*0418     | 60                         | 10 | 66 | 14 |    |
| DRB1*0419     | 65                         | 55 | 59 | 60 |    |
| DRB1*0420     | 60                         | 57 |    |    |    |
| DRB1*0421     | 60                         | 20 |    |    |    |
| DRB1*0422     | 60                         | 56 | 26 | 27 | 14 |
| DRB1*0423     | 70                         |    |    |    |    |
| DRB1*0424     | 61                         | 42 | 71 |    |    |
| DRB1*0425     | 60                         | 56 | 67 | 66 | 14 |
| DRB1*0426     | 72                         |    |    |    |    |
| DRB1*0427     | 56                         | 57 | 8  |    |    |
| DRB1*0428     | 60                         | 56 | 25 | 61 |    |
| DRB1*0429     | 73                         |    |    |    |    |
| DRB1*0430     | 74                         |    |    |    |    |
| DRB1*0431     | 55                         | 60 | 56 | 75 | 76 |
| DRB1*0432     | 77                         |    |    |    |    |
| DRB1*0433     | 78                         |    |    |    |    |
| DRB1*0434     | 55                         | 79 | 56 | 20 |    |
| DRB1*0435     | 55                         | 25 | 20 |    |    |
| DRB1*0436     | 55                         | 67 | 68 | 14 |    |
| DRB1*0437     | 55                         | 80 | 81 | 14 |    |
| DRB1*0438     | 55                         | 10 | 82 |    |    |
| DRB1*0439     | 83                         |    |    |    |    |
| DRB1*0440     | 84                         |    |    |    |    |
| DRB1*0441     | 55                         | 85 | 86 | 57 | 14 |
| DRB1*0442     | 55                         | 25 | 14 |    |    |
| DRB1*0443     | 55                         | 60 | 25 |    |    |
| DRB1*0444     | 60                         | 56 | 13 | 14 |    |

**Table 23-4**

| Allele Number | Probe Number for Detection |     |     |     |    |
|---------------|----------------------------|-----|-----|-----|----|
| DRB1*070101   | 87                         | 88  | 89  |     |    |
| DRB1*070102   | 90                         | 91  | 92  | 89  |    |
| DRB1*0703     | 93                         |     |     |     |    |
| DRB1*0704     | 91                         | 48  |     |     |    |
| DRB1*0705     | 94                         |     |     |     |    |
| DRB1*0706     | 91                         | 95  | 89  |     |    |
| DRB1*0707     | 96                         |     |     |     |    |
| DRB1*080101   | 97                         | 42  | 67  | 66  | 33 |
| DRB1*080102   | 98                         |     |     |     |    |
| DRB1*080201   | 99                         | 33  |     |     |    |
| DRB1*080202   | 97                         | 18  | 67  | 66  |    |
| DRB1*080203   | 100                        |     |     |     |    |
| DRB1*080302   | 45                         | 97  | 61  | 10  | 66 |
| DRB1*080401   | 97                         | 18  | 67  | 66  | 14 |
| DRB1*080402   | 18                         | 67  | 66  | 101 |    |
| DRB1*080403   | 66                         | 101 | 102 |     |    |
| DRB1*080404   | 66                         | 14  | 103 |     |    |
| DRB1*0805     | 97                         | 61  | 67  | 68  |    |
| DRB1*0806     | 61                         | 67  | 66  | 14  |    |
| DRB1*0807     | 104                        | 67  | 66  | 33  |    |
| DRB1*0808     | 38                         | 105 | 66  |     |    |
| DRB1*0809     | 45                         | 50  | 67  | 66  | 33 |
| DRB1*0810     | 97                         | 61  | 10  | 66  | 14 |
| DRB1*0811     | 38                         | 66  | 33  |     |    |
| DRB1*0812     | 10                         | 66  | 8   |     |    |
| DRB1*0813     | 97                         | 18  | 66  | 33  |    |
| DRB1*0814     | 106                        |     |     |     |    |
| DRB1*0815     | 107                        | 10  | 66  |     |    |
| DRB1*0816     | 108                        | 33  |     |     |    |
| DRB1*0817     | 25                         | 61  | 67  | 66  |    |

**Table 23-5**

| Allele Number | Probe Number for Detection |     |     |     |     |
|---------------|----------------------------|-----|-----|-----|-----|
| DRB1*0818     | 45                         | 97  | 61  | 10  | 109 |
| DRB1*0819     | 110                        | 10  | 66  |     |     |
| DRB1*0820     | 111                        | 18  | 67  | 66  | 14  |
| DRB1*0821     | 112                        |     |     |     |     |
| DRB1*0822     | 8                          | 113 | 114 |     |     |
| DRB1*0823     | 15                         | 66  |     |     |     |
| DRB1*0824     | 97                         | 18  | 67  | 68  |     |
| DRB1*090102   | 92                         | 115 |     |     |     |
| DRB1*0902     | 58                         | 115 |     |     |     |
| DRB1*100101   | 116                        |     |     |     |     |
| DRB1*100102   | 117                        | 118 |     |     |     |
| DRB1*110101   | 99                         | 36  | 67  | 68  |     |
| DRB1*110102   | 36                         | 67  | 68  | 33  |     |
| DRB1*110103   | 36                         | 67  | 119 | 68  | 120 |
| DRB1*110104   | 121                        | 18  | 25  | 35  | 67  |
| DRB1*1102     | 35                         | 10  | 11  | 12  | 14  |
| DRB1*1103     | 99                         | 122 | 14  |     |     |
| DRB1*110401   | 99                         | 67  | 68  | 14  |     |
| DRB1*110402   | 36                         | 14  | 103 |     |     |
| DRB1*1105     | 123                        | 35  | 36  | 67  | 68  |
| DRB1*110601   | 36                         | 67  | 68  | 8   |     |
| DRB1*110602   | 36                         | 67  | 68  | 7   | 8   |
| DRB1*1107     | 35                         | 36  | 26  | 27  | 14  |
| DRB1*110801   | 18                         | 25  | 35  | 124 |     |
| DRB1*110802   | 36                         | 124 | 33  |     |     |
| DRB1*1109     | 32                         | 23  | 24  | 25  | 35  |
| DRB1*1110     | 22                         | 32  | 50  | 25  | 35  |
| DRB1*1111     | 25                         | 35  | 67  | 125 | 122 |
| DRB1*111201   | 126                        | 25  | 35  | 67  | 68  |
| DRB1*111202   | 111                        | 127 | 128 | 25  | 35  |
|               |                            |     |     | 67  | 68  |

**Table 23-6**

| Allele Number | Probe Number for Detection |     |     |     |     |     |
|---------------|----------------------------|-----|-----|-----|-----|-----|
| DRB1*1113     | 25                         | 35  | 36  | 71  | 7   | 14  |
| DRB1*1114     | 35                         | 10  | 11  | 12  |     |     |
| DRB1*1115     | 129                        | 36  | 67  | 119 | 68  |     |
| DRB1*1116     | 23                         | 35  | 10  | 11  | 12  | 14  |
| DRB1*1117     | 111                        | 35  | 36  | 130 | 131 | 14  |
| DRB1*1118     | 18                         | 35  | 10  | 109 | 14  |     |
| DRB1*1119     | 18                         | 35  | 10  | 109 |     |     |
| DRB1*1120     | 23                         | 35  | 10  | 11  | 12  |     |
| DRB1*1121     | 11                         | 12  | 8   |     |     |     |
| DRB1*1122     | 55                         | 25  | 36  | 67  | 68  |     |
| DRB1*1123     | 35                         | 36  | 67  | 68  | 132 | 66  |
| DRB1*1124     | 108                        | 36  | 67  | 119 | 68  |     |
| DRB1*1125     | 36                         | 67  | 66  | 14  |     |     |
| DRB1*1126     | 133                        | 134 | 18  | 25  | 35  |     |
| DRB1*112701   | 135                        | 68  | 13  |     |     |     |
| DRB1*112702   | 35                         | 68  | 136 |     |     |     |
| DRB1*1128     | 134                        | 137 | 138 | 25  | 35  | 67  |
| DRB1*1129     | 45                         | 111 | 134 | 25  | 35  | 67  |
| DRB1*1130     | 139                        | 68  |     |     |     |     |
| DRB1*1131     | 35                         | 140 | 10  | 109 |     |     |
| DRB1*1132     | 35                         | 36  | 67  | 68  | 141 |     |
| DRB1*1133     | 142                        |     |     |     |     |     |
| DRB1*1134     | 18                         | 25  | 35  | 14  |     |     |
| DRB1*1135     | 142                        | 14  |     |     |     |     |
| DRB1*1136     | 25                         | 35  | 80  | 81  | 14  |     |
| DRB1*1137     | 45                         | 111 | 134 | 18  | 35  | 67  |
| DRB1*1138     | 143                        |     |     |     |     |     |
| DRB1*1139     | 144                        | 68  |     |     |     |     |
| DRB1*1140     | 23                         | 25  | 35  | 67  | 125 | 122 |
| DRB1*1141     | 35                         | 67  | 125 | 122 | 14  |     |

**Table 23-7**

| Allele Number | Probe Number for Detection |     |     |     |     |     |              |
|---------------|----------------------------|-----|-----|-----|-----|-----|--------------|
| DRB1*1142     | 18                         | 25  | 35  | 124 | 14  |     |              |
| DRB1*1143     | 144                        | 68  | 14  |     |     |     |              |
| DRB1*120101   | 145                        | 146 | 147 | 148 | 92  | 10  | 7 8          |
| DRB1*120102   | 145                        | 146 | 147 | 148 | 92  | 10  | 8            |
| DRB1*120201   | 148                        | 67  | 7   | 8   |     |     |              |
| DRB1*120202   | 148                        | 67  | 120 | 8   |     |     |              |
| DRB1*120302   | 147                        | 148 | 92  | 10  | 120 |     |              |
| DRB1*1204     | 148                        | 36  | 10  | 7   | 8   |     |              |
| DRB1*1205     | 147                        | 92  | 10  | 7   | 8   |     |              |
| DRB1*1206     | 147                        | 148 | 92  | 10  | 7   | 8   |              |
| DRB1*1207     | 149                        |     |     |     |     |     |              |
| DRB1*1208     | 150                        | 148 | 92  | 10  | 7   | 8   |              |
| DRB1*130101   | 46                         | 23  | 24  | 25  | 10  | 11  | 12 14        |
| DRB1*130102   | 151                        |     |     |     |     |     |              |
| DRB1*130103   | 12                         | 7   | 14  |     |     |     |              |
| DRB1*130201   | 46                         | 23  | 24  | 25  | 10  | 11  | 12           |
| DRB1*130202   | 12                         | 152 |     |     |     |     |              |
| DRB1*130301   | 42                         | 109 | 153 | 33  |     |     |              |
| DRB1*130302   | 61                         | 109 | 153 |     |     |     |              |
| DRB1*1304     | 25                         | 61  | 11  | 12  | 14  |     |              |
| DRB1*1305     | 134                        | 32  | 23  | 25  | 67  | 68  |              |
| DRB1*1306     | 46                         | 23  | 25  | 10  | 109 | 14  |              |
| DRB1*130701   | 154                        | 45  | 111 | 134 | 46  | 155 | 18 67 119 68 |
| DRB1*130702   | 111                        | 46  | 155 | 18  | 58  | 67  | 119 68       |
| DRB1*1308     | 46                         | 50  | 11  | 12  | 14  |     |              |
| DRB1*1309     | 24                         | 25  | 10  | 156 | 14  |     |              |
| DRB1*1310     | 46                         | 23  | 25  | 10  | 109 | 153 | 14           |
| DRB1*1311     | 18                         | 25  | 67  | 68  | 14  |     |              |
| DRB1*1312     | 111                        | 61  | 10  | 109 |     |     |              |

**Table 23-8**

| Allele Number | Probe Number for Detection |     |     |     |    |    |     |
|---------------|----------------------------|-----|-----|-----|----|----|-----|
| DRB1*1313     | 111                        | 61  | 10  | 66  |    |    |     |
| DRB1*131401   | 18                         | 25  | 67  | 119 | 68 |    |     |
| DRB1*131402   | 25                         | 58  | 67  | 119 | 68 |    |     |
| DRB1*1315     | 30                         | 25  | 11  | 12  | 14 |    |     |
| DRB1*1316     | 157                        |     |     |     |    |    |     |
| DRB1*1317     | 97                         | 12  | 14  |     |    |    |     |
| DRB1*1318     | 23                         | 25  | 67  | 66  | 14 |    |     |
| DRB1*1319     | 30                         | 50  | 11  | 12  | 14 |    |     |
| DRB1*1320     | 46                         | 23  | 24  | 25  | 80 | 81 | 14  |
| DRB1*1321     | 111                        | 25  | 61  | 67  | 68 |    |     |
| DRB1*1322     | 111                        | 46  | 18  | 25  | 10 | 11 | 12  |
| DRB1*1323     | 11                         | 12  | 33  |     |    |    |     |
| DRB1*1324     | 25                         | 67  | 125 | 122 | 14 |    |     |
| DRB1*1325     | 154                        | 45  | 111 | 134 | 46 | 18 | 25  |
| DRB1*1326     | 31                         | 158 | 23  | 24  | 58 | 67 | 119 |
| DRB1*1327     | 21                         | 11  | 12  | 14  |    |    |     |
| DRB1*1328     | 159                        |     |     |     |    |    |     |
| DRB1*1329     | 46                         | 23  | 24  | 25  | 80 | 81 |     |
| DRB1*1330     | 25                         | 61  | 10  | 109 |    |    |     |
| DRB1*1331     | 104                        | 10  | 11  | 12  |    |    |     |
| DRB1*1332     | 23                         | 61  | 11  | 12  | 14 |    |     |
| DRB1*1333     | 61                         | 109 | 136 |     |    |    |     |
| DRB1*1334     | 160                        | 11  | 12  |     |    |    |     |
| DRB1*1335     | 161                        |     |     |     |    |    |     |
| DRB1*1336     | 46                         | 23  | 24  | 10  | 11 | 12 |     |
| DRB1*1337     | 109                        | 153 | 33  |     |    |    |     |
| DRB1*1338     | 61                         | 11  | 12  |     |    |    |     |
| DRB1*1339     | 43                         | 10  | 11  | 12  |    |    |     |
| DRB1*1340     | 46                         | 23  | 24  | 10  | 11 | 12 | 14  |

**Table 23-9**

| Allele Number | Probe Number for Detection |     |     |     |     |    |
|---------------|----------------------------|-----|-----|-----|-----|----|
| DRB1*1341     | 21                         | 11  | 12  |     |     |    |
| DRB1*1342     | 23                         | 67  | 68  | 14  |     |    |
| DRB1*1343     | 25                         | 38  | 80  | 81  | 14  |    |
| DRB1*1344     | 111                        | 134 | 46  | 18  | 25  | 14 |
| DRB1*1345     | 25                         | 38  | 10  | 11  | 12  |    |
| DRB1*1346     | 18                         | 104 | 162 | 67  | 135 | 68 |
| DRB1*1347     | 111                        | 18  | 67  | 66  | 33  |    |
| DRB1*1348     | 61                         | 11  | 12  | 14  |     |    |
| DRB1*1349     | 111                        | 61  | 67  | 68  |     |    |
| DRB1*1350     | 134                        | 137 | 25  | 67  | 68  |    |
| DRB1*1351     | 163                        |     |     |     |     |    |
| DRB1*1352     | 46                         | 32  | 52  | 25  | 10  | 11 |
| DRB1*1353     | 30                         | 24  | 11  | 12  | 14  |    |
| DRB1*1354     | 92                         | 125 | 122 | 14  |     |    |
| DRB1*1355     | 111                        | 42  | 67  | 66  | 33  |    |
| DRB1*140101   | 99                         | 111 | 130 | 131 | 14  |    |
| DRB1*140102   | 164                        | 111 | 38  | 130 | 14  |    |
| DRB1*1402     | 99                         | 158 | 23  | 24  |     |    |
| DRB1*1403     | 99                         | 23  | 66  |     |     |    |
| DRB1*1404     | 99                         | 97  | 130 | 131 | 14  |    |
| DRB1*140501   | 165                        | 166 | 131 | 14  |     |    |
| DRB1*140502   | 165                        | 131 | 14  |     |     |    |
| DRB1*1406     | 45                         | 30  | 23  | 24  | 14  |    |
| DRB1*140701   | 164                        | 111 | 38  | 130 | 131 |    |
| DRB1*140702   | 38                         | 131 | 33  |     |     |    |
| DRB1*1408     | 164                        | 111 | 107 | 130 | 131 | 14 |
| DRB1*1409     | 167                        | 134 | 46  | 22  | 32  | 23 |
| DRB1*1410     | 59                         | 38  | 130 | 131 | 14  |    |
| DRB1*1411     | 97                         | 35  | 36  | 130 | 131 | 14 |
| DRB1*1412     | 30                         | 23  | 24  | 66  | 14  |    |

**Table 23-10**

| Allele Number | Probe Number for Detection |     |     |     |     |     |
|---------------|----------------------------|-----|-----|-----|-----|-----|
| DRB1*1413     | 30                         | 23  | 24  | 61  |     |     |
| DRB1*1414     | 111                        | 50  | 130 | 131 |     |     |
| DRB1*1415     | 97                         | 50  | 67  | 66  | 14  |     |
| DRB1*1416     | 38                         | 10  | 11  | 12  | 14  |     |
| DRB1*1417     | 134                        | 46  | 22  | 23  | 25  | 14  |
| DRB1*1418     | 23                         | 24  | 166 | 130 | 131 | 14  |
| DRB1*1419     | 29                         | 45  | 30  | 23  | 24  | 20  |
| DRB1*1420     | 133                        | 150 | 30  | 50  | 14  |     |
| DRB1*1421     | 46                         | 22  | 23  | 25  | 20  | 14  |
| DRB1*1422     | 50                         | 38  | 105 | 67  | 135 | 68  |
| DRB1*1423     | 164                        | 111 | 50  | 130 | 131 | 14  |
| DRB1*1424     | 30                         | 158 | 23  | 24  | 10  | 168 |
| DRB1*1425     | 111                        | 18  | 38  | 105 | 67  | 135 |
| DRB1*1426     | 169                        | 14  |     |     |     | 68  |
| DRB1*1427     | 30                         | 23  | 24  | 67  | 68  | 132 |
| DRB1*1428     | 38                         | 8   | 113 |     |     |     |
| DRB1*1429     | 30                         | 158 | 23  | 24  | 8   |     |
| DRB1*1430     | 134                        | 46  | 22  | 32  | 23  | 25  |
| DRB1*1431     | 97                         | 38  | 7   | 14  |     |     |
| DRB1*1432     | 164                        | 111 | 38  | 71  | 14  |     |
| DRB1*1433     | 24                         | 25  | 57  | 14  |     |     |
| DRB1*1434     | 164                        | 111 | 107 | 7   | 14  |     |
| DRB1*1435     | 25                         | 38  | 130 | 131 | 14  |     |
| DRB1*1436     | 49                         | 131 |     |     |     |     |
| DRB1*1437     | 165                        | 156 | 14  |     |     |     |
| DRB1*1438     | 38                         | 170 | 14  |     |     |     |
| DRB1*1439     | 171                        | 38  | 130 | 131 | 14  |     |
| DRB1*1440     | 30                         | 50  | 124 | 132 | 66  |     |
| DRB1*1441     | 45                         | 111 | 150 | 30  | 50  | 172 |
| DRB1*1442     | 18                         | 25  | 130 | 131 |     |     |

**Table 23-11**

| Allele Number | Probe Number for Detection |     |     |     |     |     |
|---------------|----------------------------|-----|-----|-----|-----|-----|
| DRB1*1443     | 173                        |     |     |     |     |     |
| DRB1*1444     | 165                        | 166 | 131 |     |     |     |
| DRB1*1445     | 165                        | 10  | 131 | 14  |     |     |
| DRB1*150101   | 174                        |     |     |     |     |     |
| DRB1*150102   | 175                        | 176 |     |     |     |     |
| DRB1*150103   | 177                        | 7   | 14  |     |     |     |
| DRB1*150104   | 177                        | 25  | 10  | 156 | 14  |     |
| DRB1*150201   | 177                        | 25  | 58  | 10  | 156 |     |
| DRB1*150202   | 25                         | 10  | 168 | 156 |     |     |
| DRB1*150203   | 178                        |     |     |     |     |     |
| DRB1*1503     | 177                        | 179 | 25  | 58  | 10  | 156 |
| DRB1*1504     | 177                        | 67  | 180 | 14  |     |     |
| DRB1*1505     | 177                        | 25  | 58  | 16  | 14  |     |
| DRB1*1506     | 181                        |     |     |     |     |     |
| DRB1*1507     | 177                        | 58  | 10  | 156 | 14  |     |
| DRB1*1508     | 182                        |     |     |     |     |     |
| DRB1*1509     | 183                        | 156 |     |     |     |     |
| DRB1*1510     | 177                        | 12  | 14  |     |     |     |
| DRB1*1511     | 177                        | 58  | 10  | 156 |     |     |
| DRB1*1512     | 177                        | 61  | 42  | 10  | 156 | 14  |
| DRB1*1513     | 177                        | 25  | 58  | 184 | 156 | 14  |
| DRB1*160101   | 177                        | 67  | 120 |     |     |     |
| DRB1*160102   | 177                        | 67  | 68  |     |     |     |
| DRB1*160201   | 177                        | 120 |     |     |     |     |
| DRB1*160202   | 177                        | 124 |     |     |     |     |
| DRB1*1603     | 185                        |     |     |     |     |     |
| DRB1*1604     | 127                        | 58  | 67  | 68  | 132 | 66  |
| DRB1*1605     | 177                        | 10  | 120 |     |     |     |
| DRB1*1607     | 186                        |     |     |     |     |     |
| DRB1*1608     | 177                        | 187 | 67  | 120 |     |     |

**Table 23-12**

| Allele Number | Probe Number for Detection |     |     |     |     |
|---------------|----------------------------|-----|-----|-----|-----|
| DRB3*010101   | 188                        | 34  | 172 | 162 | 26  |
| DRB3*01010201 | 189                        | 26  |     |     |     |
| DRB3*010103   | 188                        | 34  | 172 | 26  | 28  |
| DRB3*010104   | 28                         | 175 |     |     |     |
| DRB3*0102     | 190                        | 191 | 34  | 172 | 162 |
| DRB3*0103     | 188                        | 192 | 172 | 162 | 26  |
| DRB3*0104     | 193                        | 34  | 172 | 162 | 28  |
| DRB3*0105     | 194                        | 28  |     |     |     |
| DRB3*0106     | 188                        | 34  | 50  | 162 | 26  |
| DRB3*0107     | 188                        | 20  | 40  | 48  |     |
| DRB3*0108     | 188                        | 23  | 24  | 162 | 26  |
| DRB3*0109     | 188                        | 195 | 162 | 26  | 28  |
| DRB3*0110     | 196                        |     |     |     |     |
| DRB3*0201     | 189                        | 14  |     |     |     |
| DRB3*020201   | 197                        | 198 | 195 | 47  | 48  |
| DRB3*020202   | 198                        | 195 | 47  | 40  | 41  |
| DRB3*020203   | 199                        |     |     |     |     |
| DRB3*020204   | 47                         | 200 | 48  |     |     |
| DRB3*0203     | 198                        | 201 | 47  | 48  |     |
| DRB3*0204     | 47                         | 26  | 27  | 14  |     |
| DRB3*0205     | 30                         | 195 | 47  | 48  |     |
| DRB3*0206     | 23                         | 202 | 47  | 48  |     |
| DRB3*0207     | 47                         | 104 | 162 | 48  |     |
| DRB3*0208     | 47                         | 61  | 42  | 48  |     |
| DRB3*0209     | 195                        | 92  | 40  | 48  |     |
| DRB3*0210     | 197                        | 198 | 195 | 40  | 48  |
| DRB3*0211     | 47                         | 10  | 48  |     |     |
| DRB3*0212     | 198                        | 195 | 47  | 48  |     |
| DRB3*0213     | 203                        |     |     |     |     |
| DRB3*0214     | 204                        |     |     |     |     |

**Table 23-13**

| Allele Number | Probe Number for Detection |     |     |     |     |
|---------------|----------------------------|-----|-----|-----|-----|
| DRB3*0215     | 198                        | 195 | 47  | 40  |     |
| DRB3*0216     | 47                         | 105 | 48  |     |     |
| DRB3*0217     | 47                         | 67  | 48  |     |     |
| DRB3*030101   | 92                         | 48  | 14  |     |     |
| DRB3*030102   | 205                        |     |     |     |     |
| DRB3*0302     | 198                        | 92  | 48  | 14  |     |
| DRB3*0303     | 30                         | 50  | 162 | 92  | 26  |
| DRB4*010101   | 206                        |     |     |     |     |
| DRB4*0102     | 207                        |     |     |     |     |
| DRB4*010302   | 208                        | 209 | 210 |     |     |
| DRB4*010303   | 206                        | 131 |     |     |     |
| DRB4*010304   | 211                        |     |     |     |     |
| DRB4*0104     | 212                        | 213 |     |     |     |
| DRB4*0105     | 208                        | 214 |     |     |     |
| DRB4*0106     | 208                        | 209 | 210 |     |     |
| DRB4*0201N    | 87                         | 14  |     |     |     |
| DRB5*010101   | 215                        |     |     |     |     |
| DRB5*010102   | 129                        | 58  | 67  | 119 | 68  |
| DRB5*0102     | 2                          | 216 | 217 | 67  | 119 |
| DRB5*0103     | 218                        | 219 | 220 |     | 120 |
| DRB5*0104     | 129                        | 66  |     |     |     |
| DRB5*0105     | 108                        | 67  | 119 | 120 |     |
| DRB5*0106     | 129                        | 113 |     |     |     |
| DRB5*0107     | 129                        | 10  | 221 | 120 |     |
| DRB5*0109     | 222                        |     |     |     |     |
| DRB5*0110N    | 218                        | 217 | 67  | 119 | 120 |
| DRB5*0111     | 129                        | 156 |     |     |     |
| DRB5*0112     | 129                        | 223 | 224 | 225 |     |
| DRB5*0202     | 226                        | 113 |     |     |     |
| DRB5*0203     | 218                        | 217 | 10  | 168 | 156 |
| DRB5*0204     | 218                        | 67  | 180 | 113 |     |
| DRB5*0205     | 218                        | 217 | 113 |     |     |

**Table 24-1**

| Allele Number | Probe Number for Detection |    |    |    |    |    |
|---------------|----------------------------|----|----|----|----|----|
|               | 0                          | 1  | 2  | 3  | 4  | 5  |
| DRB1*010101   | 0                          | 1  | 2  | 3  | 4  | 5  |
| DRB1*010102   | 6                          |    |    |    |    |    |
| DRB1*010201   | 7                          | 8  |    |    |    |    |
| DRB1*010202   | 9                          |    |    |    |    |    |
| DRB1*0103     | 10                         | 11 | 12 |    |    |    |
| DRB1*0104     | 13                         | 14 |    |    |    |    |
| DRB1*0105     | 15                         |    |    |    |    |    |
| DRB1*0106     | 16                         | 14 |    |    |    |    |
| DRB1*0107     | 17                         |    |    |    |    |    |
| DRB1*0108     | 18                         |    |    |    |    |    |
| DRB1*0109     | 19                         | 16 |    |    |    |    |
| DRB1*0110     | 20                         |    |    |    |    |    |
| DRB1*030101   | 21                         | 22 | 23 | 14 |    |    |
| DRB1*030102   | 24                         | 13 | 14 |    |    |    |
| DRB1*030201   | 21                         | 25 | 23 |    |    |    |
| DRB1*030202   | 21                         | 13 |    |    |    |    |
| DRB1*0303     | 25                         | 26 | 27 | 28 | 24 | 23 |
| DRB1*0304     | 22                         | 26 | 29 | 30 | 24 | 23 |
| DRB1*030501   | 22                         | 26 | 27 | 28 | 30 | 24 |
| DRB1*030502   | 23                         | 31 |    |    |    |    |
| DRB1*0306     | 22                         | 32 | 26 | 27 | 28 | 24 |
| DRB1*0307     | 21                         | 23 | 14 |    |    |    |
| DRB1*0308     | 21                         | 33 | 34 | 23 | 14 |    |
| DRB1*0309     | 35                         |    |    |    |    |    |
| DRB1*0310     | 36                         | 24 | 23 | 14 |    |    |
| DRB1*0311     | 22                         | 37 | 38 | 23 | 14 |    |
| DRB1*0312     | 39                         | 40 | 24 | 23 |    |    |
| DRB1*0313     | 41                         | 24 | 23 | 14 |    |    |
| DRB1*0314     | 22                         | 26 | 27 | 28 | 30 | 24 |

**Table 24-2**

| Allele Number | Probe Number for Detection |    |    |    |    |    |    |
|---------------|----------------------------|----|----|----|----|----|----|
|               | 22                         | 26 | 27 | 28 | 30 | 24 | 14 |
| DRB1*0315     | 22                         |    |    |    |    |    |    |
| DRB1*0316     | 42                         |    |    |    |    |    |    |
| DRB1*0317     | 43                         | 44 | 18 | 45 | 13 |    |    |
| DRB1*0318     | 46                         | 14 |    |    |    |    |    |
| DRB1*0319     | 47                         | 24 | 23 | 14 |    |    |    |
| DRB1*0320     | 23                         | 8  |    |    |    |    |    |
| DRB1*0321     | 48                         | 30 | 24 | 23 | 14 |    |    |
| DRB1*0322     | 49                         |    |    |    |    |    |    |
| DRB1*0323     | 35                         | 14 |    |    |    |    |    |
| DRB1*0324     | 30                         | 37 | 38 | 13 | 14 |    |    |
| DRB1*0325     | 22                         | 26 | 50 | 51 | 30 | 24 | 23 |
| DRB1*040101   | 52                         | 20 |    |    |    |    |    |
| DRB1*040102   | 53                         |    |    |    |    |    |    |
| DRB1*0402     | 52                         | 12 | 14 |    |    |    |    |
| DRB1*040301   | 54                         | 18 | 55 | 14 |    |    |    |
| DRB1*040302   | 54                         | 56 | 55 | 14 |    |    |    |
| DRB1*0404     | 52                         | 14 |    |    |    |    |    |
| DRB1*040501   | 54                         | 57 | 58 | 18 | 39 |    |    |
| DRB1*040502   | 59                         |    |    |    |    |    |    |
| DRB1*040503   | 54                         | 57 | 58 | 18 | 39 |    |    |
| DRB1*040504   | 58                         | 40 | 31 |    |    |    |    |
| DRB1*0406     | 54                         | 58 | 55 | 14 |    |    |    |
| DRB1*040701   | 54                         | 18 | 55 |    |    |    |    |
| DRB1*040702   | 60                         |    |    |    |    |    |    |
| DRB1*0408     | 61                         | 54 | 57 | 58 | 18 |    |    |
| DRB1*0409     | 58                         | 39 | 20 |    |    |    |    |
| DRB1*0410     | 58                         | 18 | 39 | 14 |    |    |    |
| DRB1*0411     | 52                         | 55 | 14 |    |    |    |    |
| DRB1*0412     | 58                         | 39 | 10 | 62 | 14 |    |    |
| DRB1*0413     | 58                         | 20 | 14 |    |    |    |    |

**Table 24-3**

| Allele Number | Probe Number for Detection |    |    |    |    |
|---------------|----------------------------|----|----|----|----|
| DRB1*0414     | 58                         | 10 | 11 | 12 |    |
| DRB1*0415     | 54                         | 58 | 34 | 63 | 64 |
| DRB1*0416     | 65                         |    |    |    |    |
| DRB1*0417     | 58                         | 39 | 55 |    |    |
| DRB1*0418     | 58                         | 10 | 62 | 14 |    |
| DRB1*0419     | 61                         | 54 | 57 | 58 |    |
| DRB1*0420     | 58                         | 55 |    |    |    |
| DRB1*0421     | 61                         | 54 | 57 | 20 |    |
| DRB1*0422     | 58                         | 18 | 24 | 23 | 14 |
| DRB1*0423     | 66                         |    |    |    |    |
| DRB1*0424     | 39                         | 40 | 67 |    |    |
| DRB1*0425     | 58                         | 18 | 63 | 64 | 68 |
| DRB1*0426     | 69                         |    |    |    |    |
| DRB1*0427     | 18                         | 55 | 8  |    |    |
| DRB1*0428     | 58                         | 18 | 30 | 39 |    |
| DRB1*0429     | 70                         |    |    |    |    |
| DRB1*0430     | 71                         |    |    |    |    |
| DRB1*0431     | 54                         | 58 | 18 | 68 | 62 |
| DRB1*0432     | 72                         |    |    |    |    |
| DRB1*0433     | 73                         |    |    |    |    |
| DRB1*0434     | 74                         | 75 | 18 | 20 |    |
| DRB1*0435     | 54                         | 30 | 20 |    |    |
| DRB1*0436     | 54                         | 63 | 64 | 14 |    |
| DRB1*0437     | 54                         | 11 | 12 | 14 |    |
| DRB1*0438     | 54                         | 47 | 20 |    |    |
| DRB1*0439     | 76                         |    |    |    |    |
| DRB1*0440     | 77                         |    |    |    |    |
| DRB1*0441     | 54                         | 78 | 79 | 55 | 14 |
| DRB1*0442     | 54                         | 30 | 14 |    |    |
| DRB1*0443     | 54                         | 58 | 30 |    |    |

**Table 24-4**

| Allele Number | Probe Number for Detection |    |    |    |    |
|---------------|----------------------------|----|----|----|----|
| DRB1*0444     | 58                         | 18 | 13 | 14 |    |
| DRB1*070101   | 80                         | 37 | 81 |    |    |
| DRB1*070102   | 82                         | 83 | 84 | 81 |    |
| DRB1*0703     | 85                         |    |    |    |    |
| DRB1*0704     | 83                         | 13 |    |    |    |
| DRB1*0705     | 86                         |    |    |    |    |
| DRB1*0706     | 83                         | 87 | 81 |    |    |
| DRB1*0707     | 88                         |    |    |    |    |
| DRB1*080101   | 89                         | 40 | 63 | 62 | 31 |
| DRB1*080102   | 90                         |    |    |    |    |
| DRB1*080201   | 91                         | 31 |    |    |    |
| DRB1*080202   | 89                         | 18 | 63 | 62 |    |
| DRB1*080203   | 92                         |    |    |    |    |
| DRB1*080302   | 21                         | 10 | 62 |    |    |
| DRB1*080401   | 21                         | 62 | 14 |    |    |
| DRB1*080402   | 18                         | 63 | 62 | 93 |    |
| DRB1*080403   | 62                         | 93 | 31 |    |    |
| DRB1*080404   | 62                         | 14 | 31 |    |    |
| DRB1*0805     | 89                         | 39 | 63 | 64 |    |
| DRB1*0806     | 39                         | 63 | 62 | 14 |    |
| DRB1*0807     | 94                         | 63 | 62 | 31 |    |
| DRB1*0808     | 36                         | 95 | 62 |    |    |
| DRB1*0809     | 96                         | 48 | 63 | 62 | 31 |
| DRB1*0810     | 89                         | 39 | 10 | 62 | 14 |
| DRB1*0811     | 97                         | 62 |    |    |    |
| DRB1*0812     | 10                         | 62 | 8  |    |    |
| DRB1*0813     | 96                         | 89 | 18 | 62 |    |
| DRB1*0814     | 98                         |    |    |    |    |
| DRB1*0815     | 95                         | 10 | 62 |    |    |
| DRB1*0816     | 99                         | 31 |    |    |    |

**Table 24-5**

| Allele Number | Probe Number for Detection |     |     |     |     |    |
|---------------|----------------------------|-----|-----|-----|-----|----|
| DRB1*0817     | 30                         | 39  | 63  | 62  |     |    |
| DRB1*0818     | 96                         | 89  | 39  | 10  | 64  |    |
| DRB1*0819     | 100                        | 10  | 62  |     |     |    |
| DRB1*0820     | 101                        | 18  | 63  | 62  | 14  |    |
| DRB1*0821     | 102                        |     |     |     |     |    |
| DRB1*0822     | 8                          | 103 | 31  |     |     |    |
| DRB1*0823     | 15                         | 62  |     |     |     |    |
| DRB1*0824     | 89                         | 18  | 63  | 64  |     |    |
| DRB1*090102   | 104                        | 84  |     |     |     |    |
| DRB1*0902     | 104                        | 56  |     |     |     |    |
| DRB1*100101   | 105                        |     |     |     |     |    |
| DRB1*100102   | 106                        | 107 |     |     |     |    |
| DRB1*110101   | 91                         | 34  | 63  | 64  |     |    |
| DRB1*110102   | 34                         | 63  | 64  | 31  |     |    |
| DRB1*110103   | 34                         | 63  | 108 | 109 | 110 |    |
| DRB1*110104   | 111                        | 18  | 30  | 33  | 63  | 64 |
| DRB1*1102     | 21                         | 34  | 10  | 11  | 12  | 14 |
| DRB1*1103     | 91                         | 12  | 14  |     |     |    |
| DRB1*110401   | 91                         | 63  | 64  | 14  |     |    |
| DRB1*110402   | 34                         | 14  | 31  |     |     |    |
| DRB1*1105     | 112                        | 33  | 34  | 63  | 64  |    |
| DRB1*110601   | 34                         | 63  | 64  | 8   |     |    |
| DRB1*110602   | 34                         | 63  | 64  | 7   | 8   |    |
| DRB1*1107     | 33                         | 34  | 24  | 23  | 14  |    |
| DRB1*110801   | 18                         | 30  | 33  | 64  |     |    |
| DRB1*110802   | 18                         | 30  | 33  | 64  |     |    |
| DRB1*1109     | 113                        | 27  | 28  | 30  | 33  | 63 |
| DRB1*1110     | 26                         | 114 | 48  | 30  | 33  | 63 |
| DRB1*1111     | 30                         | 33  | 63  | 11  | 12  |    |
| DRB1*111201   | 115                        | 30  | 33  | 63  | 64  |    |

**Table 24-6**

| Allele Number | Probe Number for Detection |     |     |     |     |    |
|---------------|----------------------------|-----|-----|-----|-----|----|
| DRB1*111202   | 101                        | 116 | 48  | 30  | 33  | 63 |
| DRB1*1113     | 21                         | 30  | 33  | 67  | 7   | 14 |
| DRB1*1114     | 21                         | 34  | 10  | 11  | 12  |    |
| DRB1*1115     | 117                        | 34  | 63  | 118 | 64  |    |
| DRB1*1116     | 27                         | 33  | 10  | 11  | 12  | 14 |
| DRB1*1117     | 21                         | 33  | 55  | 7   | 14  |    |
| DRB1*1118     | 18                         | 33  | 10  | 64  | 14  |    |
| DRB1*1119     | 18                         | 33  | 10  | 64  |     |    |
| DRB1*1120     | 27                         | 33  | 10  | 11  | 12  |    |
| DRB1*1121     | 33                         | 10  | 11  | 12  |     |    |
| DRB1*1122     | 54                         | 30  | 34  | 63  | 64  |    |
| DRB1*1123     | 33                         | 34  | 63  | 64  | 68  | 62 |
| DRB1*1124     | 99                         | 34  | 63  | 118 | 64  |    |
| DRB1*1125     | 34                         | 63  | 62  | 14  |     |    |
| DRB1*1126     | 43                         | 101 | 119 | 18  | 30  | 33 |
| DRB1*112701   | 120                        | 64  | 13  |     |     |    |
| DRB1*112702   | 33                         | 64  | 23  |     |     |    |
| DRB1*1128     | 119                        | 78  | 79  | 30  | 33  | 63 |
| DRB1*1129     | 43                         | 101 | 119 | 30  | 33  | 63 |
| DRB1*1130     | 121                        | 64  |     |     |     |    |
| DRB1*1131     | 122                        | 123 | 10  | 64  |     |    |
| DRB1*1132     | 33                         | 34  | 63  | 64  | 124 |    |
| DRB1*1133     | 125                        |     |     |     |     |    |
| DRB1*1134     | 18                         | 30  | 33  | 14  |     |    |
| DRB1*1135     | 125                        | 14  |     |     |     |    |
| DRB1*1136     | 30                         | 33  | 11  | 12  | 14  |    |
| DRB1*1137     | 43                         | 101 | 119 | 18  | 33  | 63 |
| DRB1*1138     | 126                        |     |     |     |     |    |
| DRB1*1139     | 45                         | 64  |     |     |     |    |
| DRB1*1140     | 27                         | 30  | 33  | 63  | 11  | 12 |

**Table 24-7**

| Allele Number | Probe Number for Detection |     |     |     |     |     |     |
|---------------|----------------------------|-----|-----|-----|-----|-----|-----|
| DRB1*1141     | 33                         | 63  | 11  | 12  | 14  |     |     |
| DRB1*1142     | 18                         | 30  | 33  | 64  | 14  |     |     |
| DRB1*1143     | 45                         | 64  | 14  |     |     |     |     |
| DRB1*120101   | 127                        | 21  | 128 | 129 | 84  | 10  | 7   |
| DRB1*120102   | 127                        | 21  | 128 | 129 | 84  | 10  | 8   |
| DRB1*120201   | 129                        | 63  | 7   | 8   |     |     |     |
| DRB1*120202   | 129                        | 63  | 110 |     |     |     |     |
| DRB1*120302   | 128                        | 129 | 84  | 10  | 110 |     |     |
| DRB1*1204     | 129                        | 34  | 10  | 7   |     |     |     |
| DRB1*1205     | 128                        | 84  | 10  | 7   | 8   |     |     |
| DRB1*1206     | 21                         | 128 | 129 | 84  | 10  | 7   | 8   |
| DRB1*1207     | 130                        |     |     |     |     |     |     |
| DRB1*1208     | 131                        | 129 | 84  | 10  | 7   | 8   |     |
| DRB1*130101   | 21                         | 27  | 30  | 10  | 11  | 12  | 14  |
| DRB1*130102   | 132                        |     |     |     |     |     |     |
| DRB1*130103   | 12                         | 7   | 14  |     |     |     |     |
| DRB1*130201   | 21                         | 27  | 30  | 10  | 11  | 12  |     |
| DRB1*130202   | 133                        | 134 |     |     |     |     |     |
| DRB1*130301   | 40                         | 135 | 136 | 31  |     |     |     |
| DRB1*130302   | 39                         | 135 | 136 |     |     |     |     |
| DRB1*1304     | 21                         | 40  | 10  | 11  | 12  | 14  |     |
| DRB1*1305     | 119                        | 113 | 27  | 30  | 63  | 64  |     |
| DRB1*1306     | 44                         | 27  | 30  | 10  | 64  | 14  |     |
| DRB1*130701   | 137                        | 43  | 101 | 119 | 44  | 138 | 18  |
| DRB1*130702   | 101                        | 44  | 138 | 18  | 56  | 63  | 118 |
| DRB1*1308     | 44                         | 48  | 11  | 12  | 14  |     |     |
| DRB1*1309     | 28                         | 30  | 47  | 16  | 14  |     |     |
| DRB1*1310     | 44                         | 27  | 30  | 10  | 135 | 136 | 14  |
| DRB1*1311     | 18                         | 30  | 63  | 64  | 14  |     |     |

**Table 24-8**

| Allele Number | Probe Number for Detection |     |     |     |    |    |     |
|---------------|----------------------------|-----|-----|-----|----|----|-----|
| DRB1*1312     | 101                        | 39  | 10  | 64  |    |    |     |
| DRB1*1313     | 101                        | 39  | 10  | 62  |    |    |     |
| DRB1*131401   | 18                         | 30  | 63  | 118 | 64 |    |     |
| DRB1*131402   | 30                         | 56  | 63  | 118 | 64 |    |     |
| DRB1*1315     | 25                         | 30  | 11  | 12  | 14 |    |     |
| DRB1*1316     | 139                        |     |     |     |    |    |     |
| DRB1*1317     | 21                         | 89  | 30  | 10  | 11 | 12 | 14  |
| DRB1*1318     | 27                         | 30  | 63  | 62  | 14 |    |     |
| DRB1*1319     | 21                         | 48  | 10  | 11  | 12 | 14 |     |
| DRB1*1320     | 44                         | 27  | 28  | 30  | 11 | 12 | 14  |
| DRB1*1321     | 21                         | 40  | 63  | 64  |    |    |     |
| DRB1*1322     | 101                        | 44  | 18  | 30  | 10 | 11 | 12  |
| DRB1*1323     | 11                         | 12  | 31  |     |    |    |     |
| DRB1*1324     | 30                         | 63  | 11  | 12  | 14 |    |     |
| DRB1*1325     | 137                        | 43  | 101 | 119 | 44 | 18 | 30  |
| DRB1*1326     | 26                         | 113 | 27  | 28  | 56 | 63 | 108 |
| DRB1*1327     | 22                         | 11  | 12  | 14  |    |    |     |
| DRB1*1328     | 140                        |     |     |     |    |    |     |
| DRB1*1329     | 44                         | 27  | 28  | 30  | 11 | 12 |     |
| DRB1*1330     | 30                         | 39  | 10  | 64  |    |    |     |
| DRB1*1331     | 141                        | 10  | 11  | 12  |    |    |     |
| DRB1*1332     | 27                         | 39  | 11  | 12  | 14 |    |     |
| DRB1*1333     | 39                         | 135 | 23  |     |    |    |     |
| DRB1*1334     | 142                        | 11  | 12  |     |    |    |     |
| DRB1*1335     | 143                        |     |     |     |    |    |     |
| DRB1*1336     | 44                         | 27  | 28  | 10  | 11 | 12 |     |
| DRB1*1337     | 135                        | 136 | 31  |     |    |    |     |
| DRB1*1338     | 39                         | 11  | 12  |     |    |    |     |
| DRB1*1339     | 41                         | 10  | 11  | 12  |    |    |     |

**Table 24-9**

| Allele Number | Probe Number for Detection |     |     |    |     |    |    |
|---------------|----------------------------|-----|-----|----|-----|----|----|
| DRB1*1340     | 44                         | 27  | 28  | 10 | 11  | 12 | 14 |
| DRB1*1341     | 22                         | 11  | 12  |    |     |    |    |
| DRB1*1342     | 27                         | 63  | 64  | 14 |     |    |    |
| DRB1*1343     | 30                         | 36  | 11  | 12 | 14  |    |    |
| DRB1*1344     | 101                        | 119 | 44  | 18 | 30  | 14 |    |
| DRB1*1345     | 30                         | 36  | 10  | 11 | 12  |    |    |
| DRB1*1346     | 18                         | 141 | 144 | 63 | 120 | 64 |    |
| DRB1*1347     | 101                        | 18  | 63  | 62 | 31  |    |    |
| DRB1*1348     | 39                         | 11  | 12  | 14 |     |    |    |
| DRB1*1349     | 101                        | 39  | 63  | 64 |     |    |    |
| DRB1*1350     | 119                        | 78  | 30  | 63 | 64  |    |    |
| DRB1*1351     | 145                        |     |     |    |     |    |    |
| DRB1*1352     | 44                         | 50  | 51  | 30 | 10  | 11 | 12 |
| DRB1*1353     | 25                         | 28  | 11  | 12 | 14  |    |    |
| DRB1*1354     | 84                         | 11  | 12  | 14 |     |    |    |
| DRB1*1355     | 101                        | 40  | 63  | 62 | 31  |    |    |
| DRB1*140101   | 91                         | 101 | 55  | 7  | 14  |    |    |
| DRB1*140102   | 146                        | 101 | 36  | 67 | 55  |    |    |
| DRB1*1402     | 91                         | 27  | 28  |    |     |    |    |
| DRB1*1403     | 91                         | 27  | 62  |    |     |    |    |
| DRB1*1404     | 91                         | 89  | 55  | 7  | 14  |    |    |
| DRB1*140501   | 147                        | 148 | 7   | 14 |     |    |    |
| DRB1*140502   | 147                        | 7   | 14  |    |     |    |    |
| DRB1*1406     | 149                        | 43  | 25  | 27 | 28  | 14 |    |
| DRB1*140701   | 146                        | 101 | 36  | 55 | 7   |    |    |
| DRB1*140702   | 36                         | 7   | 31  |    |     |    |    |
| DRB1*1408     | 146                        | 101 | 95  | 55 | 7   | 14 |    |
| DRB1*1409     | 43                         | 119 | 44  | 26 | 113 | 27 |    |
| DRB1*1410     | 57                         | 36  | 55  | 7  | 14  |    |    |
| DRB1*1411     | 89                         | 33  | 34  | 55 | 7   |    |    |
| DRB1*1412     | 25                         | 27  | 28  | 64 | 68  | 62 |    |

**Table 24-10**

| Allele Number | Probe Number for Detection |     |     |     |     |     |
|---------------|----------------------------|-----|-----|-----|-----|-----|
| DRB1*1413     | 25                         | 27  | 28  | 39  |     |     |
| DRB1*1414     | 146                        | 101 | 48  | 55  | 7   |     |
| DRB1*1415     | 89                         | 48  | 63  | 62  | 14  |     |
| DRB1*1416     | 48                         | 36  | 10  | 11  | 12  |     |
| DRB1*1417     | 119                        | 44  | 26  | 27  | 30  | 14  |
| DRB1*1418     | 27                         | 28  | 148 | 55  | 7   | 14  |
| DRB1*1419     | 21                         | 25  | 27  | 28  | 20  |     |
| DRB1*1420     | 43                         | 101 | 131 | 25  | 48  |     |
| DRB1*1421     | 44                         | 26  | 27  | 30  | 20  |     |
| DRB1*1422     | 48                         | 36  | 95  | 63  | 120 | 64  |
| DRB1*1423     | 146                        | 101 | 48  | 55  | 7   | 14  |
| DRB1*1424     | 25                         | 113 | 27  | 28  | 47  | 19  |
| DRB1*1425     | 101                        | 18  | 36  | 95  | 63  | 120 |
| DRB1*1426     | 150                        | 14  |     |     |     | 64  |
| DRB1*1427     | 25                         | 27  | 28  | 63  | 64  | 68  |
| DRB1*1428     | 36                         | 8   | 103 |     |     | 62  |
| DRB1*1429     | 25                         | 113 | 27  | 28  | 8   |     |
| DRB1*1430     | 119                        | 44  | 26  | 113 | 27  | 30  |
| DRB1*1431     | 89                         | 36  | 7   | 14  |     |     |
| DRB1*1432     | 146                        | 101 | 36  | 67  | 14  |     |
| DRB1*1433     | 28                         | 30  | 55  | 14  |     |     |
| DRB1*1434     | 146                        | 101 | 95  | 7   | 14  |     |
| DRB1*1435     | 30                         | 36  | 55  | 7   | 14  |     |
| DRB1*1436     | 151                        | 7   |     |     |     |     |
| DRB1*1437     | 147                        | 16  | 14  |     |     |     |
| DRB1*1438     | 36                         | 13  | 14  |     |     |     |
| DRB1*1439     | 152                        | 36  | 55  | 7   | 14  |     |
| DRB1*1440     | 25                         | 48  | 64  | 68  | 62  |     |
| DRB1*1441     | 43                         | 101 | 131 | 25  | 153 | 154 |
| DRB1*1442     | 18                         | 30  | 55  | 7   |     |     |
| DRB1*1443     | 155                        |     |     |     |     |     |

**Table 24-11**

| Allele Number | Probe Number for Detection |     |     |     |    |    |
|---------------|----------------------------|-----|-----|-----|----|----|
| DRB1*1444     | 147                        | 148 | 7   |     |    |    |
| DRB1*1445     | 147                        | 47  | 7   | 14  |    |    |
| DRB1*150101   | 156                        |     |     |     |    |    |
| DRB1*150102   | 157                        | 158 |     |     |    |    |
| DRB1*150103   | 159                        | 7   | 14  |     |    |    |
| DRB1*150104   | 159                        | 30  | 47  | 16  | 14 |    |
| DRB1*150201   | 159                        | 30  | 56  | 47  | 16 |    |
| DRB1*150202   | 30                         | 47  | 19  | 16  |    |    |
| DRB1*150203   | 160                        |     |     |     |    |    |
| DRB1*1503     | 159                        | 161 | 30  | 56  | 47 | 16 |
| DRB1*1504     | 159                        | 162 | 16  | 14  |    |    |
| DRB1*1505     | 159                        | 30  | 56  | 16  | 14 |    |
| DRB1*1506     | 163                        |     |     |     |    |    |
| DRB1*1507     | 159                        | 56  | 47  | 16  |    |    |
| DRB1*1508     | 164                        |     |     |     |    |    |
| DRB1*1509     | 165                        | 16  |     |     |    |    |
| DRB1*1510     | 159                        | 12  |     |     |    |    |
| DRB1*1511     | 159                        | 56  | 47  | 16  |    |    |
| DRB1*1512     | 159                        | 39  | 40  | 47  | 16 | 14 |
| DRB1*1513     | 159                        | 30  | 56  | 166 | 16 | 14 |
| DRB1*160101   | 159                        | 63  | 110 |     |    |    |
| DRB1*160102   | 159                        | 63  | 64  |     |    |    |
| DRB1*160201   | 159                        | 110 |     |     |    |    |
| DRB1*160202   | 159                        | 64  |     |     |    |    |
| DRB1*1603     | 167                        |     |     |     |    |    |
| DRB1*1604     | 159                        | 62  |     |     |    |    |
| DRB1*1605     | 159                        | 10  | 110 |     |    |    |
| DRB1*1607     | 168                        |     |     |     |    |    |
| DRB1*1608     | 159                        | 28  | 63  | 110 |    |    |
| DRB3*010101   | 169                        | 32  | 154 | 144 | 24 | 13 |
| DRB3*01010201 | 170                        | 24  |     |     |    |    |

**Table 24-12**

| Allele Number | Probe Number for Detection |     |     |     |           |
|---------------|----------------------------|-----|-----|-----|-----------|
| DRB3*010103   | 169                        | 32  | 154 | 24  | 13        |
| DRB3*010104   | 169                        | 32  | 154 | 144 | 24 13     |
| DRB3*0102     | 171                        | 172 | 32  | 154 | 144 24 13 |
| DRB3*0103     | 169                        | 173 | 154 | 144 | 24 13     |
| DRB3*0104     | 169                        | 32  | 154 | 144 | 24 13     |
| DRB3*0105     | 174                        | 13  |     |     |           |
| DRB3*0106     | 169                        | 32  | 48  | 144 | 24 13     |
| DRB3*0107     | 169                        | 175 | 38  | 13  |           |
| DRB3*0108     | 169                        | 27  | 28  | 144 | 24 13     |
| DRB3*0109     | 169                        | 176 | 144 | 24  | 13        |
| DRB3*0110     | 177                        |     |     |     |           |
| DRB3*0201     | 170                        | 14  |     |     |           |
| DRB3*020201   | 178                        | 179 | 176 | 45  | 13        |
| DRB3*020202   | 178                        | 179 | 176 | 45  | 38 23     |
| DRB3*020203   | 180                        |     |     |     |           |
| DRB3*020204   | 45                         | 181 | 13  |     |           |
| DRB3*0203     | 179                        | 29  | 45  | 13  |           |
| DRB3*0204     | 45                         | 24  | 23  | 14  |           |
| DRB3*0205     | 178                        | 25  | 176 | 45  | 13        |
| DRB3*0206     | 182                        | 183 | 45  | 13  |           |
| DRB3*0207     | 45                         | 141 | 144 | 13  |           |
| DRB3*0208     | 45                         | 39  | 40  | 13  |           |
| DRB3*0209     | 176                        | 84  | 38  | 13  |           |
| DRB3*0210     | 178                        | 179 | 176 | 38  | 13        |
| DRB3*0211     | 45                         | 47  | 13  |     |           |
| DRB3*0212     | 184                        | 13  |     |     |           |
| DRB3*0213     | 185                        |     |     |     |           |
| DRB3*0214     | 186                        |     |     |     |           |
| DRB3*0215     | 178                        | 179 | 176 | 45  | 38        |
| DRB3*0216     | 45                         | 95  | 13  |     |           |
| DRB3*0217     | 45                         | 162 | 13  |     |           |

**Table 24-13**

| Allele Number | Probe Number for Detection |     |     |     |     |    |
|---------------|----------------------------|-----|-----|-----|-----|----|
| DRB3*030101   | 84                         | 13  | 14  |     |     |    |
| DRB3*030102   | 187                        |     |     |     |     |    |
| DRB3*0302     | 179                        | 48  | 84  | 175 | 38  | 13 |
| DRB3*0303     | 25                         | 48  | 144 | 84  | 24  | 13 |
| DRB4*010101   | 188                        |     |     |     |     |    |
| DRB4*0102     | 189                        |     |     |     |     |    |
| DRB4*010302   | 80                         | 190 | 14  |     |     |    |
| DRB4*010303   | 188                        | 191 |     |     |     |    |
| DRB4*010304   | 192                        |     |     |     |     |    |
| DRB4*0104     | 23                         | 193 |     |     |     |    |
| DRB4*0105     | 194                        | 195 |     |     |     |    |
| DRB4*0106     | 194                        | 190 | 193 |     |     |    |
| DRB4*0201N    | 80                         | 14  |     |     |     |    |
| DRB5*010101   | 196                        |     |     |     |     |    |
| DRB5*010102   | 117                        | 56  | 63  | 118 | 64  |    |
| DRB5*0102     | 197                        | 78  | 63  | 108 | 110 |    |
| DRB5*0103     | 198                        | 199 | 200 |     |     |    |
| DRB5*0104     | 117                        | 62  |     |     |     |    |
| DRB5*0105     | 99                         | 63  | 108 | 110 |     |    |
| DRB5*0106     | 117                        | 103 |     |     |     |    |
| DRB5*0107     | 117                        | 10  | 108 | 110 |     |    |
| DRB5*0109     | 201                        |     |     |     |     |    |
| DRB5*0110N    | 197                        | 78  | 63  | 108 | 110 |    |
| DRB5*0111     | 117                        | 16  |     |     |     |    |
| DRB5*0112     | 117                        | 84  | 67  | 81  |     |    |
| DRB5*0202     | 202                        | 103 |     |     |     |    |
| DRB5*0203     | 198                        | 78  | 47  | 19  | 16  |    |
| DRB5*0204     | 203                        | 162 | 16  | 103 |     |    |
| DRB5*0205     | 203                        | 78  | 103 |     |     |    |

(Example 13)

Probes for identification of HLA-MICA allele

Extraction of DNA from 1 ml of human blood was performed using GFX Genomic Blood DNA Purification Kit from Amersham Biosciences in the same manner as in Example 1.

Next, quantitative PCR was carried out in the same manner as in Example 1 except that probes in Tables 25-1 and 25-2 were used and 2  $\mu$ l of the mixed primers consisting of 1  $\mu$ l each of respective solutions of the following primers (10 pmol/ $\mu$ l) and 6  $\mu$ l of ultra pure water:

AGTGGAGCCAGTGGACCCAAGA (SEQ ID NO: 1043423)

TGATGTTTCTTCTTACAACAAAC (SEQ ID NO: 1053424)

After PCR amplification, referring to Amp Plot and Dissociation curves on a display of 5700 software, and to the allele-probe list 1 (Tables 27-1 and 27-2), it was identified as MICA\*00201.

(Example 14)

Extraction of DNA from 1 ml of human blood was performed in the same way as in Example 3. PCR of human HLA-MICA was then performed in the same manner as in Example 2 except that 3  $\mu$ l of the mixed primer consisting of 1  $\mu$ l each of the solutions containing the following sequences at 10 pmol/ $\mu$ l respectively, and 12  $\mu$ l of ultra pure water were used:

GTCTTCGTTATAACCTCACGGT (SEQ ID NO:1063425)

GCTCGTGAGCCTGCAGGTCCTG (SEQ ID NO:1073426)

AGTGGAGCCAGTGGACCCAAGA (SEQ ID NO:1083427)

At the same time, a DNA microarray was prepared  
5 to identify the allele in the specimen described  
above in the same manner as in Example 2, except that  
probes in the probe list of Table 26-1 were used to  
form the probe spots respectively.

Then, hybridization was performed using the  
10 above specimen and the prepared DNA microarray in the  
same manner as in Example 2. The DNA microarray was  
air-dried and the fluorometry measurement was  
conducted with GenePix4000B (Axon). Referring to the  
allele-probe correspondence list 2 (Tables 28-1 and  
15 28-2), it was identified as MICA\*00201.

#### Allele list

##### MICA\*001

gtcttcgttataacctcacggtgctgcctggatggatctgtgcagtcagggttctcactgaggatcatctgga  
20 tggtcagcccttcctgcgtgtgacaggcagaaatgcaggcacaaggccccaggacagtggcagaagatgtccctg  
ggaaataagacatggcacagagagaccagAgacttgacagggaaacggaaaggacctcaggatgaccctggctcata  
tcaaggaccagaaagaaggcttgcattccctccaggagattagggtctgtgagatccatgaagacaacagcaccag  
gagctcccagcattctactacatggggagctttctctccaaaacctggagactAaggaatggacaatgccc  
cagtcctccagagctcagacacctggccatgaacgtcaggaatttcttgaaggaagatgccatgaagaccaagacac  
25 actatcacgctatgcatgcagactgcctgcaggaactacggcgatataAaatccGgcgtagtccctgaggagaac  
agtgcacccatggtaatgtcacccgcagcgaggcctcagagggcaacattaccgtgacatgcaggcgttctggc  
ttctatccctgaaatatcacactgaGctggcgtcaggatgggtatctttagccacgacacccacgcagtgggggg



gagctcccagcatttactacatgggagcttcctccaaaacctggagactgaggaatggacaatgcc  
 cagtccctccagagctcagacccgtggcatgaacgtcaggaatttcttaaggaaagatgccatgaagacc  
 actatacgcctatgcacactgcctgcaggaactacggcgatataaaaatccggcgtagtcctgaggaga  
 atgtcccccatggtaatgtcacccgcagTgaggcctcagaggcaacattaccgtacatgcaggcgttgc  
 5 ttctatcccttgaatatcacactgagctggcgtcaggatgggtatcttgagccacgacacccagcagtgggg  
 atgtcctgcctgatggaatggAACCTTACAGACGCTGGCCACCGAGTTGCCAAGGGAGAGGAGCAGGTT  
 cacctgctacatggAACACAGCGGAATCACAGCACTCACCTGTGCCCTG (SEQ ID NO:1113430)  
**MICA\*004**  
 gtcttcgttataacctcacgggtgtcctggatggatctgtcagtcagggtttcttgctgaggtacatctgaa  
 10 tggtcagcccttcctgcgttatgcaggcagaaatgcaggcaagccccaggacagtggcagaagatgtcctg  
 gaaataagacatggacagagagaccaggacttgcacaggaaacggaaaggacctcaggatgaccctggcata  
 tcaaggaccagaaagaaggcttgcattccctccaggagattaggctgtgagatccatgaagacaacagcacc  
 gagctcccagcatttactacatgggagcttcctccaaaacctggagactgaggaatggacagtgc  
 cagtccctccagagctcagacccgtggcatgaacgtcaggaatttcttaaggaaagatgccatgaagacc  
 15 actatacgcctatgcacactgcctgcaggaactacggcgatataatccagcgtagtcctgaggagaAG  
 atgtcccccatggtaatgtcacccgcagcggcctcagaggcaacatcaccgtacatgcaggcgttccag  
 ttctatccccgaatatcacactgacccgtcaggatgggtatcttgagccacgacacccagcagtgggg  
 atgtcctgcctgatggaatggAACCTTACAGACGCTGGCCACCGAGTTGCCAAGGGAGAGGAGCAGGTT  
 cacctgctacatggAACACAGCGGAATCACAGCACTCACCTGTGCCCTG (SEQ ID NO:1123431)  
**MICA\*005**  
 20 ctgtggcagacattccatgtttctgtgtgtgtgtgtgtgtgtgtgtgtgtgtgtgtgtgtgtgtgt  
 gttgttgtaagaagaaaacatcagctgcagagggtccagagctcgtgagcctgcaggtcctggatcaacacc  
 tggtggacagtgaccacaggatgccacacagctcggttgcggatccagcgttgcagCtcttgggtccactggc  
 tccact (SEQ ID NO:1123431)  
**MICA\*005**  
 25 gtcttcgttataacctcacgggtgtcctggatggatctgtcagtcagggtttcttgctgaggtacatctgaa  
 tggtcagcccttcctgcgtAtgacaggcagaaatgcaggcaagccccaggacagtggcagaagatgtcctg  
 gaaataagacatggacagagagaccaggacttgcacaggaaacggaaaggacctcaggatgaccctggc  
 tata

tcaaggaccagaaagaaggcttgcattccctccaggagattagggctgtgagatccatgaagacaacagcaccag  
 gagctcccagcattctactacgtatggggagcttcctctccaaaacctggagactgaggaatggacaGtgccc  
 cagtccctccagagctcagacccatggccatgaacgtcaggaatttcttaaggaagatgccatgaagaccaagacac  
 actatcacgctatgcatgcagactgcctgcaggaactacggcgatataaaaatccggctgtcctgaggagaac  
 5 agtgc~~ccccccatgg~~taatgtcacc~~ccgc~~cagcggctcagaggcaacattaccgtgacatgcaggc~~ttcc~~agc  
 ttctatccccgaatatacactgaCtggcgtcaggatgggtatcttgagccacgacacccagcagtgggggg  
 atgtcctgcctgatggaatggAACCTTACCAAGCCTGGTGGCCACCAGGATTGCCGaggagaggagcagaggtt  
 cacctgctacatggaacacagcggaaatcacagcactcaccc~~ctgt~~gc~~cc~~c~~t~~  
 (SEQ ID NO:1133432)  
**MICA\*006**

10 gtcttcgttataacctcacggtgctgtcctggatggatctgtgcagtcagg~~ttt~~c~~t~~tgctgaggatcatctgga  
 tggtcagcccttc~~c~~tcgc~~c~~tatgacaggcaga~~aa~~atgcaggc~~aa~~agccccaggacagtggcagaagatgtcctg  
 ggaataagacatggacagagagaccaggactt~~g~~acagg~~aa~~acggaaaggac~~c~~tcaggatgacc~~ct~~ggc~~t~~cata  
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 gagctcccagcattctactacgtatggggagcttcctctccaaaacctggagactgaggaatggac~~act~~gtccc  
 15 cagtcctccagagctcagacccatggccatgaacgtcaggaatttcttaaggaagatgccatgaagaccaagacac  
 actatcacgctatgcatgcagactgcctgcaggaactacggcgatataaaaatccggctgtcctgaggagaac  
 agtgc~~ccccccatgg~~taatgtcacc~~ccgc~~cagcggctcagaggcaacatcaccgtgacatgcaggc~~ttcc~~agc  
 ttctatccccgaatatacactgac~~ct~~ggcgtcaggatgggtatcttgagccacgacacccagcagtgggggg  
 atgtcctgcctgatggaatggAACCTTACCAAGCCTGGTGGCCACCAGGATTGCCaggagaggagcagaggtt  
 20 cacctgctacatggaacacagcggaaatcacagcactcaccc~~ctgt~~gc~~cc~~c~~t~~  
 cattggcagacattccat~~tt~~ctgctgttgtgtctgtctgtctat~~ttt~~ttattattat~~ttt~~ctatgtcc  
 gtttgttaagaagaaaacatcagctgcagagg~~tt~~ccagagctcgtgagc~~ct~~gc~~cc~~c~~t~~tgaggatcaacacccag~~t~~  
 tggac~~g~~actgaccacaggatgccacacagctcggatttcagcc~~ct~~ctgtatgtcagcttgg~~cc~~actggctcc  
 act (SEQ ID NO:1143433)  
 25 **MICA\*00701**

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ggaataagacatggcacagagagaccaggacttgcacagggaaacggaaaggacctcaggatgaccctggctcata  
 tcaaggaccagaaagaaggcttgcattccctccaggagattagggtctgtgagatccatgaagacaacagcaccag  
 gagctcccagcattctactacatgggagctttctccaaaacctggagactgaggaatggacaatgcc  
 cagtccctccagagctcagacccatggccatgaacgtcaggaatttcttgaaggaagatgccatgaagaccaagac  
 5 actatcagctatgcacgcactgcctgcaggaactacggcgatatactaaaatccggcgtagtccctgaggagaac  
 agtgcccccatggtaatgtcaccgcagTgaggcctcagaggcaacattaccgtgacatgcaggcgttctgg  
 ttctatccctggaatatacactgagctggcgtcaggatgggtatctttaggccacgacacccagcagtgggg  
 atgtccctgcctgatggaatggAACCTACCAAGACCTGGTGGCCACCAGGATTGCCAAGGGAGGGAGCAGGG  
 cacctgctacatggAACACAGCGGAATCACAGCACTCACCTGTGCCCTCTGGAAAGTGCTGGTCTCAGAGT  
 10 cattggcagacattccatgttctgctgttgtctgttatTTTtattattatTTTtatgtccgttgtt  
 gtaagaagaaaacatcagctcagagggtccag (SEQ ID NO:1153434)  
**MICA\*00702**  
 gtcttcgttataacctcacggtgctgtcctggatggatctgtcagtcagggttctcgctgaggtaatctgga  
 tggtcagcccttcgcgtgtgacaggcagaatgcagggcaaagccccagggacagtggcagaagatgtcctg  
 15 ggaataagacatggcacagagagaccagGacttgcacagggaaacggaaaggacctcaggatgaccctggctcata  
 tcaaggaccagaaagaaggcttgcattccctccaggagattagggtctgtgagatccatgaagacaacagcaccag  
 gagctcccagcattctactacatgggagctttctccaaaacctggagactGaggaatggacaatgcc  
 cagtccctccagagctcagacccatggccatgaacgtcaggaatttcttgaaggaagatgccatgaagaccaagac  
 actatcagctatgcacgcactgcctgcaggaactacggcgatatactaaaatccggcgtagtccctgaggagaac  
 20 agtgcccccatggtaatgtcaccgcagcggcgtcaggatgggtatctttaggccacgacacccagcagtgggg  
 atgtccctgcctgatggaatggAACCTACCAAGACCTGGTGGCCACCAGGATTGCCAAGGGAGGGAGCAGGG  
 cacctgctacatggAACACAGCGGAATCACAGCACTCACCTGTGCCCTCTG (SEQ ID NO:1163435)  
**MICA\*00801**  
 25 gtcttcgttataacctcacggtgctgtcctggatggatctgtcagtcagggttctgtgaggtaatctgga  
 tggtcagcccttcgcgtatgacaggcagaatgcagggcaaagccccagggacagtggcagaagatgtcctg  
 ggaataagacatggcacagagagaccaggacttgcacagggaaacggaaaggacctcaggatgaccctggctcata

tcaaggaccagaaaagaaggcttgcattccctccaggagattagggctgtgagatccatgaagacaacagcaccag  
 gagctcccagcattctactacgtgggagcttcctctccaaaacctggagactgaggaatggacagtgc  
 cagtcctccagagctcagacccatggccatgaacgtcaggaatttcttgaaggaagatgccatgaagaccaagac  
 actatcacgctatgcatgcagactgcctgcaggaactacggcgatatctagaatccggcgtagtccctgaggagaac  
 5 agtgccccccatggtgaatgtcacccgcagcgaggcctcagagggcaacatcaccgtgacatgcaggcgttc  
 ttctatccccgaataatcatactgacctggcgtcaggatgggtatcttgcacgcacacccagcagtgggg  
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 cacctgctacatgaaacacagcggaaatcacagcactcaccctgtgcctctggaaagtgcgttgtc  
 cattggcagacattccatgttctgctgtgtgcgtatgtgcgttatgttttttttttatgtccgt  
 10 ttttgtaagaagaaaacatcagctgcagagggccagactcgatgtgcaggtcctggatcaacacccagtt  
 ggacgagtgaccacaggatgccacacagctcggttcagactcgatgtgcaggtcctggatcaacacccagtt  
 t (SEQ ID NO:1173436)  
**MICA\*00802**  
 gtcttcgttataacctcacggtgcgtcctggatggatctgtgcagtcagggttctgctgaggtacatctgga  
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 gggaaataagacatggacagagagaccaggacttgcacggaaacggaaaggacctcaggatgaccctggc  
 tata  
 tcaggaccagaaaaggcttgcattccctccaggagattagggctgtgagatccatgaagacaacagcaccag  
 gagctcccagcattctactacgtgggagcttcctctccaaaacctggagactgaggaatggacagtgc  
 cagtcctccagagctcagacccatggccatgaacgtcaggaatttcttgaaggaagatgccatgaagaccaagac  
 20 actatcacgctatgcatgcagactgcctgcaggaactacggcgatatctagaatccggcgtagtccctgaggagaac  
 agtgccccccatggtgaatgtcacccgcagcgaggcctcagagggcaacatcaccgtgacatgcaggcgttc  
 ttctatccccgaataatcatactgacctggcgtcaggatgggtatcttgcacgcacacccagcagtgggg  
 atgtcctgcctgtatggaatggAACCTACCAAGCTGGTGGCCACTaggatttgccgaggagaggagc  
 cacctgctacatgaaacacagcggaaatcacagcactcaccctgtgcctctggaaagtgcgttgtc  
 25 cattggcagacattccatgttctgctgtgtgcgtggcgcgtatgtgcgtatgtccgt  
 ttttgtaagaagaaaacatcagctgcagagggccag (SEQ ID NO:1183437)  
**MICA\*00803**

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 catctgga  
 tggtcagcccttcgcctatgacaggcagaatgcagggcaaagccccagggacagtggcagaagatgtcctg  
 gaaataagacatgggacagagagaccaggacttgacagggaaacggaaaggacactcaggatgaccctggctcata  
 tcaaggaccagaaagaaggcttgcattccctccaggagattaggctgtgagatccatgaagacaacagcaccag  
 5 gagctcccagcatttctactacgtatggggagcttcctctccaaaacctggagactgaggaatggacagtgc  
 ccc  
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## MICA\*023

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MICA\*036

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MICA\*037

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## MICA\*038

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## MICA\*039

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 gaagacaacagcacc  
 gagctcccagcatttctactacgatgggagctttcctccaaaacctggagactg  
 gaggaatggacaatgccc  
 cagtcctccagagctcagacccatggccatgaacgtcaggaatttcttga  
 aggaaagatgccatgaagaca  
 gagac  
 actatcacgctatgc  
 atgc  
 gagactgcctgc  
 aggaactacggc  
 gatatcta  
 aaatccggc  
 tagtc  
 ctgaggaga  
 ac  
 agtgc  
 ccccatgg  
 tgaatgtc  
 acccg  
 cagc  
 gaggc  
 ctc  
 agagg  
 caacatCacc  
 gtgacatgc  
 cagg  
 gttcc  
 cag  
 20 ttctatccccga  
 aatatcata  
 ctactgac  
 ctgg  
 cgtc  
 aggatgg  
 Ctatctt  
 gagcc  
 ac  
 gag  
 acc  
 ccc  
 cag  
 ctgg  
 ggg  
 gg  
 atgtc  
 ctgc  
 ctgatgg  
 gaatgg  
 aac  
 ctacc  
 agac  
 ctgg  
 tgg  
 ccacc  
 aggat  
 ttg  
 cccgagg  
 gagagg  
 gagagg  
 tt  
 cac  
 ctg  
 ctac  
 atgg  
 aac  
 ac  
 agc  
 ggg  
 aat  
 cac  
 agc  
 act  
 cacc  
 ctgt  
 gccc  
 ctg (SEQ ID NO:1523471)

## MICA\*040

gtcttcgttataacctcacggtgctgtcctggatggatctgtgcagtcagggttctcgctgaggta  
 catctgga  
 tggtcagcccttcctgcgtgtgacaggcagaatgcagggcaaagccccagggac  
 agtggcaga  
 agatgtcctg

ggaataagacatggcacagagagaccag~~G~~acttgacagggAACGGAAAGGACCTCAGGATGACCCTGGCTCATA  
 TCAAGGACCAAGAAGGCTTGCATTCCCTCCAGGAGATTAGGGTCTGTAGATCCATGAAGACAACAGCACCAAG  
 GAGCTCCAGCATTCTACTACATGGGAGCTTCCTCTCCAAAACCTGGAGACTAAGGAATGGACAATGCC  
 CAGTCCTCCAGAGCTCAGACCTGGCATGAACGTCAGGAATTCTGAAGGAAGATGCCATGAAGACCAAGACAC  
 5 ACTATCACGCTATGCACTGCAGACTGCCTGCAGGAACTACGGCGATATCTAAATCCGGCGTAGTCCTGAGGAGAAC  
 AGTGCCCCCATGGTGAATGTCACCCGCAGCGAGGCCTCAGAGGGCAACATTACCGTGACATGCAGGGCTCTGGC  
 TTCTATCCCTGGAATATCACACTGAGCTGGCGTAGGATGGGTATCTTGAGGCCACGACACCCAGCAGTGGGGGG  
 ATGTCCTGCCTGATGGGAATGGAACCTACCAGACCTGGTGGCCACCAGGATTGCCAAGGGAGAGGAGCAGAGGTT  
 CACCTGCTACATGGAACACAGCGGAATCACAGCACTCACCTGTGCCCTCTG (SEQ ID NO:1533472)

10 MICA\*041

GTCTTCGTTATAACCTCACGGTGTGTCGGGGATGGATCTGTGAGTCAGGGTTCTCGCTGAGG~~G~~ACATCTGGA  
 TGGTCAGCCCTTCCTGCGCTGTGACAGGCAGAAATGCAAGGGCAAAGCCCCAGGGACAGTGGGCAGAAGATGTCCTG  
 GGAAATAAGACATGGCACAGAGAGACCAGGGACTTGACAGGGAACGGAAAGGACCTCAGGATGACCCTGGCTCATA  
 TCAAGGACCAAGAAGGCTTGCATTCCCTCCAGGAGATTAGGGTCTGTAGATCCATGAAGACAACAGCACCAAG  
 15 GAGCTCCAGCATTCTACTACATGGGAGCTTCCTCTCCAAAACCTGGAGACTGAGGAATGGACAATGCC  
 CAGTCCTCCAGAGCTCAGACCTGGCATGAACGTCAGGAATTCTGAAGGAAGATGCCATGAAGACCAAGACAC  
 ACTATCACGCTATGCACTGCAGACTGCCTGCAGGAACTACGGCGATATCTAAATCCGGCGTAGTCCTGAGGAGAAC  
 AGTGCCCCCATGGTGAATGTCACCCGCAGCGAGGCCTCAGAGGGCAACATTACCGTGACATGCAGGGCTCTGGC  
 TTCTATCCCTGGAATATCACACTGAGCTGGCGTAGGATGGGTATCTTGAGGCCACGACACCCAGCAGTGGGGGG  
 20 ATGTCCTGCCTGATGGGAATGGAACCTACCAGACCTGGTGGCCACCAGGATTGCCAAGGGAGAGGAGCAGAGGTT  
 CACCTGCTACATGGAACACAGCGGAATCACAGCACTCACCTGTGCCCTCTGGAAAGTGCTGGTCTCAGAGT  
 CATTGGCAGACATTCCATGTTCTGCTGTTGCTGCTGCTGCTGCTGCTGCTGCTGCTGCTGCTGCTGCTGCTGCT  
 TCTA~~G~~TCTGTTGTAAGAAGAAAACATCAGCTCAGAGGGTCCAG (SEQ ID NO:1543473)

MICA\*042

25 GTCTTCGTTATAACCTCACGGTGTGTCCTGGGATGGATCTGTGAGTCAGGGTTCTGCTGAGGATACATCTGGA  
 TGGTCAGCCCTTCCTGCGCTATGACAGGCAGAAATGCAAGGGCAAAGCCCCAGGGACAGTGGGCAGAAGATGTCCTG  
 GGAAATAAGACATGGCACAGAGAGACCAGGGACTTGACAGGGAACGGAAAGGACCTCAGGATGACCCTGGCTCATA

tcaaggaccagaaagaaggcttgcattccctccaggagattagggctgtgagatccatgaagacaacagcaccag  
 gagctcccagcattctactacgtatggggagctttcctctccaaaacctggagactgaggaatggacaatgccc  
 cagtcctccagagctcagacccatggccatgaacgtcaggaatttcttaaggaagatgccatgaagaccaagacac  
 actatcacgctatgcatgcagactgcctgcaggaactacggcgatatctaaaatccggctgtcctgaggagaac  
 5 agtgcccccatggtaatgtcacccgcagcgaggcctcagagggcaacatcaccgtgacatgcaggcgttccagc  
 ttctatccccgaatatcatactgacctggcgtcaggatgggtatcttgagccacgacacccagcagtgggggg  
 atgtcctgcctgatggaatggAACCTACCAAGCTGGTGGCCAC Taggatttgccgaggagaggagcagaggtt  
 cacctgctacatggaacacagcggaaatcacagcactcacccctgtgcctctg (SEQ ID NO:1553474)  
**MICA\*043**

10 gtcttcgttataacctcacggtgctgtcctggatggatctgtgcagtcagggttctcgctgaggatcatctgga  
 tggtcagcccttcctgcgtgtgacaggcagaaatgcagggcaaagcccccaggacagtggcagaagatgtcctg  
 ggaataagacatggacagagagaccaggacttgcacagggaaacggacacctcaggatgaccctggctcata  
 tcaaggaccagaaagaaggcttgcattccctccaggagattagggctgtgagatccatgaagacaacagcaccag  
 gagctcccagcattctactacgtatggggagctttcctctccaaaacctggagactgaggaatggacaatgccc  
 15 cagtcctccagagctcagacccatggccatgaacgtcaggaatttcttaaggaagatgccatgaagaccaagacac  
 gctatcacgctatgcatgcagactgcctgcaggaactacggcgatatctaaaatccggctgtcctgaggagaac  
 agtgcccccatggtaatgtcacccgcagcgaggcctcagagggcaacattaccgtgacatgcaggcgttctggc  
 ttctatccctggaatatcacactgagctggcgtcaggatgggtatcttgagccacgacacccagcagtgggggg  
 atgtcctgcctgatggaatggAACCTACCAAGCTGGTGGCCACCGGATTGCCAAGGGAGAGGAGCAGAGTtt  
 20 cacctgctacatggaacacagcggaaatcacagcactcacccctgtgcctctggaaagtgcgtgtcagatgt  
 cattggcagacattccatgtttctgctgtgtgtctgtatTTTttattattatTTTtatgtctgttt  
 gtaagaagaaaacatcagctcagagggtccag (SEQ ID NO:1563475)  
**MICA\*044**

gtcttcgttataacctcacggtgctgtccGgggatggatctgtgcagtcagggttctcgctgaggatcatctgga  
 25 tggtcagcccttcctgcgtatgacaggcagaaatgcagggcaaagcccccaggacagtggcagaagatgtcctg  
 ggaataagacatggacagagagaccaggacttgcacagggaaacggaaaggacacctcaggatgaccctggctcata  
 tcaaggaccagaaagaaggcttgcattccctccaggagattagggctgtgagatccatgaagacaacagcaccag

gagctcccagcattctactacgtggggagctttccctccccaaaacgtggagactgaggaaatggacagtgc  
cagtcctccagagctcagacccatgtggcatgaacgtcaggaatttcttgaaggaagatgccatgaagaccaagacac  
actatcagctatgtcatgcagactgcctgcaggaactacggcgatatctagaatccagcgttagtcctgaggagaaAG  
agtgcggccatggtaatgtcaccccgagcgaggcctcagagggcaacatcaccgtgacatgcaggcgttccagc  
5 ttctatccccgaatatcacactgaCtggcgtcaggatgggtatcttgagccacgcacccagcagtggggg  
atgtcctgcctgtatggaatggacacctaccagacctgggtggccaccaggatttgc当地aggagaggcagagg  
cacctgctacatggaacacagcggaaatcacagcactcaccctgtgcctctg (SEQ ID NO:1573476)  
MIC A\*045  
gtcttcgttataacctcacggtgctgtccggatggatctgtgcagtcagggttctcgctgaggtaatctgga  
10 tggtcagcccttcgtcgctgtgacaggcagaaatgcagggcaaagccccagggacagtggcagaagatgtcctg  
ggaaataagacatggacagagagaccaggacttgcacagggaaacggaaaggacctcaggtgaccctggctcata  
tcaaggaccagaaagaaggcttgcattccctccaggagatttaggtctgtgagatccatgaagacaacagcaccag  
gagctcccagcattctactacgtggggagctttccctccccaaaacgtggagactgaggaaatggacaatgc  
cagtcctccagagctcagacccatgtggcatgaacgtcaggaatttcttgaaggaagatgccatgaagaccaagacac  
15 actatcagctatgtcatgcagactgcctgcaggaactacggcgatatctaaaatccggcgttagtcctgaggagaac  
atgtccccatggtaatgtcaccccgagtcaggatgggtatcttgagccacgcacccagcagtggggg  
ttctatccctggaaatcacactgagctggctcaggatgggtatcttgagccacgcacccagcagtggggg  
atgtcctgcctgtatggaatggacacctaccagacctgggtggccaccaggatttgc当地aggagaggcagagg  
cacctgctacatggaacacagcggaaatcacagcactcaccctgtgcctctggaaagtgtggcttgc  
20 cattggcagacattccatgttctgtgtgtgtctattttgttattatgtccgttgc  
gtaagaagaaaacatcagctgcagagggccag (SEQ ID NO:1583477)  
MIC A\*046  
gtcttcgttataacctcacggtgctgtccggatggatctgtgcagtcagggttctcgctgaggtaatctgga  
tggtcagcccttcgtcgctgtgacaggcagaaatgcagggcaaagccccagggacagtggcagaagatgtcctg  
ggaaataagacatggacagagagaccaggacttgcacagggaaacggaaaggacctcaggtgaccctggctcata  
tcaaggaccagaaagaaggcttgcattccctccaggagatttaggtctgtgagatccatgaagacaacagcaccag  
gagctcccagcattctactacgtggggagctttccctccccaaaacgtggagactgaggaaatggacaatgc  
25

cagtcctccagagctcagacaccttggccatgaacgtcaggaatttcttgaaggaaagatgccatgaagaccaagacac  
 actatcacgctatgcatgcagactgcctgcaggaactacggcgatatctaaaatccggcgtagtccctgaggagaac  
 agtgcccccatggtaatgtcaccgcagcgaggcctcagagggcaacattaccgtgacatgcaggcgttctggc  
 ttctGtccctggaatatcacactgagctggcgtcaggatgggtatctttaggccacgacaccccagcagtggggg  
 5 atgtccctgcctgatggaaatggAACCTTACCGACCTGGTGGCCACCAGGATTGCCAAGGGAGAGGAGCAGAGGTT  
 CACCTGCTACATGGAACACAGCGGAATCACAGCACTCACCCGTGCCCTCTGGAAAGTGCTGGTGTTCAGAGT  
 CATTGGCAGACATTCCATTTCTGCTGTTGCTGCTGCTGCTGCTGCTGCTGCTGCTGCTGCTGCTGCTGCTGCT  
 TCTACGTCTGTTGTTGTAAGAAGAAAACATCAGCTGCAGAGGGTCCAG (SEQ ID NO:1593478)  
**MICA\*047**  
 10 gtcttcgttataaacctcacggtgctgtccgggatggatctgtgcagtcagggtttctcgctgaggGacatctgga  
 tggtcagcccttcctgcgtgtgacaggcagaaatgcagggcaaagccccaggacagtggcagaagatgtcctg  
 ggaataagacatggacagagagaccaggacttgcacagggaaacggaaaggacctcaggatgaccctggctcata  
 tcaaggaccagaaagaaggcttgcattccctccaggagattagggtctgtgagatccatgaagacaacagcaccag  
 gagctcccagcattctactacgtatgggagcttcctctccaaaacctggagactgaggaatggacaatgccc  
 15 cagtcctccagagctcagacaccttggccatgaacgtcaggaatttcttgaaggaaagatgccatgaagaccaagacac  
 actatcacgctatgcatgcagactgcctgcaggaactacggcgatatctaaaatccggcgtagtccctgaggagaac  
 agtgcccccatggtaatgtcaccgcagcgaggcctcagagggcaacattaccgtgacatgcaggcgttctggc  
 ttctatccctggaatatcacactgagctggcgtcaggatgggtatctttaggccacgacaccccagcagtggggg  
 atgtccctgcctgatggaaatggAACCTTACCGACCTGGTGGCCACCAGGATTGCCAAGGGAGAGGAGCAGAGGTT  
 20 cacctgctacatggaacacacagcggaatcacagcaactcacGctgtccctctggaaagtgcgtgtcgttgcagat  
 cattggcagacattccatgtttctgctggtgtcgtgctgctgctgctgctgctgctgctgctgct  
 gtttgttaagaagaaaacatcagctgcagagggtccag (SEQ ID NO:1603479)  
**MICA\*048**  
 gtcttcgttataaacctcacggtgctgtccgggatggatctgtgcagtcagggtttctcgctgaggatcatctgga  
 25 tggtcagcccttcctgcgtatgacaggcagaaatgcagggcaaagccccaggacagtggcagaagatgtcctg  
 ggaataagacatggacagagagaccaggacttgcacagggaaacggaaaggacctcaggatgaccctggctcata  
 tcaaggaccagaaagaaggcttgcattccctccaggagattagggtctgtgagatccatgaagacaacagcaccag

gagctcccagcattctactacgtggggatcttcctccaaaacctggagactgaggaaatggacagtgc  
cagtcctccagagctcagacccatgtggcatgaacgtcaggaatttcttgaaggaagatgccatgaagaccaagacac  
actatcagctatgtcatgcagactgcctgcaggaactacggcgatatctagaatccggcgtagtcctgaggagaac  
agtgcggccatggtaatgtcaccccgagcgaggcctcagagggcaacatcaccgtgacatgcaggcgttcc  
5 ttctatccccgaatatcatactgacctggcgtcaggatgggtatcttgagccacgcacccagcagtggggg  
atgtcctgcctgtatggaatggAACCTACCAAGACCTGGGTGGCCACCAGGATTGCCGAGGAGAGGAGCAGGGT  
CACCTGCTACATGGAACACAGCGGAAATCACAGCACTCACCTGTGCCCTCTGGAAAGTGCTGGTGCTCAGAGT  
CATTGGCAGACATTCCATGTTCTGCTGTTGCTGCTGCTGCTGCTGCTGCTGCTGCTGCTGCTGCTGCTGCTGCT  
GTTGTAAGAAGAAAACATCAGCTGCAGATGGTCAGAGCTCGTGCAGGTCCTGGATCAACACCCAGTTGG  
10 gacgagtgaccacaggatgccacacagctggatttcagcctgtatgtcagcttgggtccactggctccact  
**(SEQ ID NO:1613480)**  
MICA\*049  
gtcttcgttataacctcacggtgctgtcctggatggatctgtgcagtcagggtttctgctgaggatcatctgga  
tggtcagcccttcgtcgatgacaggcagaaatgcagggcaaagccccaggagactggcagaagatgtcct  
15 gaaataagacatggacagagagaccaggacttgcacagggaaacggacactcaggatgaccctggctcata  
tcaaggaccagaaagaaggcttgcattccctccaggagattagggtctgtgagatccatgaagacaacagcaccag  
gagctcccagcattctactacgtggggatcttcctccaaaacctggagactgaggaaatggacactcaggatgacc  
20 cttcgttccagagctcagacccatgtggcatgaacgtcaggaatttcttgaaggaagatgccatgaagaccaagacac  
actatcagctatgtcatgcagactgcctgcaggaactacggcgatatctagaatccagcgttagtcctgaggagaac  
agtgcggccatggtaatgtcaccccgagcgaggcctcagagggcaacatcaccgtgacatgcaggcgttcc  
25 ttctatccccgaatatcacactgacctggcgtcaggatgggtatcttgagccacgcacccagcagtggggg  
atgtcctgcctgtatggaatggAACCTACCAAGACCTGGGTGGCCACCAGGATTGCCAAGGAGAGGAGCAGGGT  
CACCTGCTACATGGAACACAGCGGAAATCACAGCACTCACCTGTGCCCTCTGGAAAGTGCTGGTGCTCAGAGT  
CATTGGCAGACATTCCATGTTCTGCTGTTGCTGCTGCTGCTGCTGCTGCTGCTGCTGCTGCTGCTGCTGCT  
GTTGTTGTAAGAAGAAAACATCAGCTGCAGAGGGTCCAGAGCTCGTGCAGGTCCTGGATCAACACCCAGT  
TGGGAATGGAGTGCAGGACACAGGGATGCCACACAGCTCGGATTCAGCCTCTGATGTCAGCTTGGGTCCACTGGCT  
act (SEQ ID NO:1623481)

In the following, Probe List M1 and M2 are shown in Tables 25-1 and 25-2 and Tables 26-1 and 26-2 and Tables 27-1 and 27-2 and Tables 28-1 and 28-2 respectively.

5

Table 25-1

| <b>Probe No.</b> | <b>Base Sequence</b>                                         |
|------------------|--------------------------------------------------------------|
| 0                | tgg gac aga gag acc agA (SEQ ID No: <u>13320</u> )           |
| 1                | tcc caa aac ctg gag act A (SEQ ID No: <u>23321</u> )         |
| 2                | g gaa cta cgg cga tat cta A (SEQ ID No: <u>33322</u> )       |
| 3                | cgg cga tat cta aaa tcc G (SEQ ID No: <u>43323</u> )         |
| 4                | cc tgg aat atc aca ctg aG (SEQ ID No: <u>53324</u> )         |
| 5                | t att ttt gtt att att att ttc taC (SEQ ID No: <u>63325</u> ) |
| 6                | c ctc acg gtg ctg tcc G (SEQ ID No: <u>73326</u> )           |
| 7                | gtg aat gtc acc cgc agT (SEQ ID No: <u>83327</u> )           |
| 8                | c gta gtc ctg agg aga aG (SEQ ID No: <u>93328</u> )          |
| 9                | t cag cct ctg atg tca gC (SEQ ID No: <u>103329</u> )         |
| 10               | cag ccc ttc ctg cgc to (SEQ ID No: <u>113330</u> )           |
| 11               | gag act gag gaa tgg aca G (SEQ ID No: <u>123331</u> )        |
| 12               | cc cgg aat atc aca ctg aC (SEQ ID No: <u>133332</u> )        |
| 13               | gcc acc agg att tgc cG (SEQ ID No: <u>143333</u> )           |
| 14               | g cga tat cta gat tcc agc A (SEQ ID No: <u>153334</u> )      |
| 15               | gg gac aga gag acc agG (SEQ ID No: <u>163335</u> )           |
| 16               | cc caa aac ctg gag act G (SEQ ID No: <u>173336</u> )         |
| 17               | gtt tct gct gtt gct gct G (SEQ ID No: <u>183337</u> )        |
| 18               | ag acc tgg gtg gcc acT (SEQ ID No: <u>193338</u> )           |
| 19               | t gct gct g gct gct gcT (SEQ ID No: <u>203339</u> )          |
| 20               | c acc cgc agc gag gcA (SEQ ID No: <u>213340</u> )            |
| 21               | ctc ttc ctc tcc caa aac G (SEQ ID No: <u>223341</u> )        |
| 22               | gc tcc cag cat ttc tac taT (SEQ ID No: <u>233342</u> )       |
| 23               | cgg cga tat cta gaa tcc A (SEQ ID No: <u>243343</u> )        |
| 24               | g tca gct ctt ggg tcc G (SEQ ID No: <u>253344</u> )          |
| 25               | cc atg aag acc aag aca cT (SEQ ID No: <u>263345</u> )        |
| 26               | tgc caa gga gag gag caA (SEQ ID No: <u>273346</u> )          |
| 27               | gaa cta cgg cga tat cta G (SEQ ID No: <u>283347</u> )        |
| 28               | c cag cat ttc tac tac gat A (SEQ ID No: <u>293348</u> )      |
| 29               | gct gca gag ggt cca gG (SEQ ID No: <u>303349</u> )           |
| 30               | c tgg cgt cag gat ggg C (SEQ ID No: <u>313350</u> )          |

Table 25-2

| <b>Probe No.</b> | <b>Base Sequence</b>                                    |
|------------------|---------------------------------------------------------|
| 31               | ggc ttg cat tcc ctc cG (SEQ ID No: <u>323351</u> )      |
| 32               | c cca gtt ggg acg agt gT (SEQ ID No: <u>333352</u> )    |
| 33               | ct gct gct gct gct gcT (SEQ ID No: <u>343353</u> )      |
| 34               | a gaa gat gtc ctg gga aaC (SEQ ID No: <u>353354</u> )   |
| 35               | t gtg cag tca ggg ttt ctT (SEQ ID No: <u>363355</u> )   |
| 36               | gcc tca gag ggc aac atC (SEQ ID No: <u>373356</u> )     |
| 37               | ct gct gct gct gct gcT (SEQ ID No: <u>383357</u> )      |
| 38               | ttc tat ccc cgg aat atc aT (SEQ ID No: <u>393358</u> )  |
| 39               | gtt gct gct gct gct gcT (SEQ ID No: <u>403359</u> )     |
| 40               | cag acc ttg gcc atg aac A (SEQ ID No: <u>413360</u> )   |
| 41               | gg aat cac agc act cac G (SEQ ID No: <u>423361</u> )    |
| 42               | a cgg cga tat cta aaa tcc A (SEQ ID No: <u>433362</u> ) |
| 43               | ctc tcc caa aac ctg gag T (SEQ ID No: <u>443363</u> )   |
| 44               | ttc ttg aag gaa gat gcc G (SEQ ID No: <u>453364</u> )   |
| 45               | cat gaa gac aac agc acc aA (SEQ ID No: <u>463365</u> )  |
| 46               | ggg ttt atc gct gag gG (SEQ ID No: <u>473366</u> )      |
| 47               | caa gga gag gag cag agT (SEQ ID No: <u>483367</u> )     |
| 48               | g gcc acc agg att tgc G (SEQ ID No: <u>493368</u> )     |
| 49               | c agg gct tct ggc ttc tG (SEQ ID No: <u>503369</u> )    |
| 50               | ag aaa aca tca gct gca gaT (SEQ ID No: <u>513370</u> )  |
| 51               | at caa cac cca gtt ggg aT (SEQ ID No: <u>523371</u> )   |

Table 26-1

| <b>Probe No.</b> | <b>Base Sequence</b>                                         |
|------------------|--------------------------------------------------------------|
| 0                | a gag acc agA gac ttg aca<br>(SEQ ID No: <u>533372</u> )     |
| 1                | ctg gag act Aag gaa tgg a<br>(SEQ ID No: <u>543373</u> )     |
| 2                | cga tat cta Aaa tcc ggc g<br>(SEQ ID No: <u>553374</u> )     |
| 3                | cta aaa tcc Ggc gta gtc c<br>(SEQ ID No: <u>563375</u> )     |
| 4                | c aca ctg aGc tgg cgt c<br>(SEQ ID No: <u>573376</u> )       |
| 5                | att att ttc taC gtc tgt tgt t<br>(SEQ ID No: <u>583377</u> ) |
| 6                | tg ctg tcc Ggg gat gga<br>(SEQ ID No: <u>593378</u> )        |
| 7                | acc cgc agT gag gcc tc<br>(SEQ ID No: <u>603379</u> )        |
| 8                | g agg aga aGa gtg ccc c<br>(SEQ ID No: <u>613380</u> )       |
| 9                | tg atg tca gCt ctt ggg tc<br>(SEQ ID No: <u>623381</u> )     |
| 10               | c ctg cgc tAt gac agg c<br>(SEQ ID No: <u>633382</u> )       |
| 11               | gaa tgg aca Gtg ccc cag<br>(SEQ ID No: <u>643383</u> )       |
| 12               | c aca ctg aCc tgg cgt c<br>(SEQ ID No: <u>653384</u> )       |
| 13               | gg att tgc cGa gga gag g<br>(SEQ ID No: <u>663385</u> )      |
| 14               | gaa tcc agc Ata gtc ctg a<br>(SEQ ID No: <u>673386</u> )     |
| 15               | a gag acc agG gac ttg ac<br>(SEQ ID No: <u>683387</u> )      |
| 16               | ctg gag act Gag gaa tgg<br>(SEQ ID No: <u>693388</u> )       |
| 17               | gtt gct gct G gct gct g<br>(SEQ ID No: <u>703389</u> )       |
| 18               | g gtg gcc acT agg att tg<br>(SEQ ID No: <u>713390</u> )      |
| 19               | gct gct g gct gct gcT a<br>(SEQ ID No: <u>723391</u> )       |
| 20               | agc gag gcA tca gag gg<br>(SEQ ID No: <u>733392</u> )        |
| 21               | tcc caa aac Gtg gag act g<br>(SEQ ID No: <u>743393</u> )     |
| 22               | at ttc tac taT gat ggg gag<br>(SEQ ID No: <u>753394</u> )    |
| 23               | cta gaa tcc Agc gta gtc c<br>(SEQ ID No: <u>763395</u> )     |
| 24               | t ggg tcc Gct ggc tcc<br>(SEQ ID No: <u>773396</u> )         |
| 25               | cc aag aca cTc tat cac gc<br>(SEQ ID No: <u>783397</u> )     |
| 26               | a gag gag caA agg ttc acc<br>(SEQ ID No: <u>793398</u> )     |
| 27               | cga tat cta Gaa tcc ggc g<br>(SEQ ID No: <u>803399</u> )     |
| 28               | tac tac gat Agg gag ctc t<br>(SEQ ID No: <u>813400</u> )     |
| 29               | g ggt cca gGg ctc gtg<br>(SEQ ID No: <u>823401</u> )         |
| 30               | cag gat ggg Cta tct ttg a<br>(SEQ ID No: <u>833402</u> )     |

Table 26-2

| <b>Probe No.</b> | <b>Base Sequence</b>                                      |
|------------------|-----------------------------------------------------------|
| 31               | at tcc ctc cGg gag att ag<br>(SEQ ID No: <u>843403</u> )  |
| 32               | t got gct gct gct gcT at<br>(SEQ ID No: <u>853404</u> )   |
| 33               | ct gct gct gCT att ttt gtt<br>(SEQ ID No: <u>863405</u> ) |
| 34               | c ctg gga aAC aag aca tgg<br>(SEQ ID No: <u>873406</u> )  |
| 35               | a ggg ttt ctT gct gag gta<br>(SEQ ID No: <u>883407</u> )  |
| 36               | g ggc aac atC acc gtg ac<br>(SEQ ID No: <u>893408</u> )   |
| 37               | gct gct gct gCT att<br>(SEQ ID No: <u>903409</u> )        |
| 38               | cgG aat atc aTa ctg acc tg<br>(SEQ ID No: <u>913410</u> ) |
| 39               | gcc atg aac Atc agg aat tt<br>(SEQ ID No: <u>923411</u> ) |
| 40               | gc act cac Gct gtg ccc<br>(SEQ ID No: <u>933412</u> )     |
| 41               | cta aaa tcc Ag gta gtc c<br>(SEQ ID No: <u>943413</u> )   |
| 42               | aac ctg gag Tct gag gaa t<br>(SEQ ID No: <u>953414</u> )  |
| 43               | gaa gat gcc Tct gag gaa t<br>(SEQ ID No: <u>963415</u> )  |
| 44               | c agc acc aAg acg tcc c<br>(SEQ ID No: <u>973416</u> )    |
| 45               | c gct gag gGa cat ctg g<br>(SEQ ID No: <u>983417</u> )    |
| 46               | g gag cag agT ttc acc tg<br>(SEQ ID No: <u>993418</u> )   |
| 47               | agg att tgc Gaa gga gag g<br>(SEQ ID No: <u>1003419</u> ) |
| 48               | ct ggc ttc tGt ccc tgg a<br>(SEQ ID No: <u>1013420</u> )  |
| 49               | a got gca gaT ggt cca ga<br>(SEQ ID No: <u>1023421</u> )  |
| 50               | ca gtt ggg aTg agt gac c<br>(SEQ ID No: <u>1033422</u> )  |

**Table 27-1**

| Allele Number | Probe Number for Detection |    |    |    |    |
|---------------|----------------------------|----|----|----|----|
|               | 0                          | 1  | 2  | 3  | 4  |
| MICA*001      | 0                          | 1  | 2  | 3  | 4  |
| MICA*00201    | 5                          |    |    |    |    |
| MICA*00202    | 6                          | 7  |    |    |    |
| MICA*004      | 8                          | 9  |    |    |    |
| MICA*005      | 10                         | 11 | 12 | 13 |    |
| MICA*006      | 14                         |    |    |    |    |
| MICA*00701    | 7                          |    |    |    |    |
| MICA*00702    | 15                         | 16 |    |    |    |
| MICA*00801    | 17                         | 9  |    |    |    |
| MICA*00802    | 18                         | 19 |    |    |    |
| MICA*00803    | 20                         |    |    |    |    |
| MICA*00901    | 21                         | 9  |    |    |    |
| MICA*00902    | 22                         |    |    |    |    |
| MICA*010      | 23                         | 13 | 9  |    |    |
| MICA*011      | 24                         |    |    |    |    |
| MICA*01201    | 25                         |    |    |    |    |
| MICA*01202    | 26                         |    |    |    |    |
| MICA*013      | 6                          | 27 | 13 |    |    |
| MICA*014      | 28                         | 8  |    |    |    |
| MICA*015      | 28                         | 29 |    |    |    |
| MICA*016      | 30                         | 9  |    |    |    |
| MICA*017      | 31                         |    |    |    |    |
| MICA*018      | 16                         |    |    |    |    |
| MICA*019      | 32                         |    |    |    |    |
| MICA*020      | 33                         |    |    |    |    |
| MICA*021      | 34                         |    |    |    |    |
| MICA*022      | 6                          | 23 | 13 |    |    |
| MICA*023      | 6                          | 17 |    |    |    |
| MICA*024      | 35                         | 10 | 11 | 36 | 12 |
| MICA*025      | 35                         | 16 |    |    |    |

**Table 27-2**

| Allele Number | Probe Number for Detection |    |    |
|---------------|----------------------------|----|----|
| MICA*026      | 7                          | 37 |    |
| MICA*027      | 38                         | 39 |    |
| MICA*028      | 27                         | 17 |    |
| MICA*029      | 40                         |    |    |
| MICA*030      | 41                         |    |    |
| MICA*031      | 35                         |    |    |
| MICA*032      | 25                         | 42 | 8  |
| MICA*033      | 43                         |    |    |
| MICA*034      | 44                         | 12 |    |
| MICA*035      | 6                          | 38 |    |
| MICA*036      | 45                         |    |    |
| MICA*037      | 38                         |    |    |
| MICA*038      | 36                         |    |    |
| MICA*039      | 30                         |    |    |
| MICA*040      | 15                         |    |    |
| MICA*041      | 46                         | 5  |    |
| MICA*042      | 18                         |    |    |
| MICA*043      | 47                         |    |    |
| MICA*044      | 6                          | 8  | 12 |
| MICA*045      | 48                         |    |    |
| MICA*046      | 49                         |    |    |
| MICA*047      | 46                         | 41 |    |
| MICA*048      | 50                         |    |    |
| MICA*049      | 51                         |    |    |

**Table 28-1**

| Allele Number | Probe Number for Detection |    |    |    |   |
|---------------|----------------------------|----|----|----|---|
|               | 0                          | 1  | 2  | 3  | 4 |
| MICA*001      | 0                          | 1  | 2  | 3  | 4 |
| MICA*00201    | 5                          |    |    |    |   |
| MICA*00202    | 6                          | 7  |    |    |   |
| MICA*004      | 8                          | 9  |    |    |   |
| MICA*005      | 10                         | 11 | 12 | 13 |   |
| MICA*006      | 14                         |    |    |    |   |
| MICA*00701    | 7                          |    |    |    |   |
| MICA*00702    | 15                         | 16 |    |    |   |
| MICA*00801    | 17                         | 9  |    |    |   |
| MICA*00802    | 18                         | 19 |    |    |   |
| MICA*00803    | 20                         |    |    |    |   |
| MICA*00901    | 21                         | 9  |    |    |   |
| MICA*00902    | 22                         |    |    |    |   |
| MICA*010      | 23                         | 13 | 9  |    |   |
| MICA*011      | 24                         |    |    |    |   |
| MICA*01201    | 25                         |    |    |    |   |
| MICA*01202    | 26                         |    |    |    |   |
| MICA*013      | 6                          | 27 | 13 |    |   |
| MICA*014      | 28                         | 8  |    |    |   |
| MICA*015      | 28                         | 29 |    |    |   |
| MICA*016      | 30                         | 9  |    |    |   |
| MICA*017      | 31                         |    |    |    |   |
| MICA*018      | 16                         |    |    |    |   |
| MICA*019      | 23                         | 13 | 32 |    |   |
| MICA*020      | 33                         |    |    |    |   |

**Table 28-2**

| Allele Number | Probe Number for Detection |    |    |    |
|---------------|----------------------------|----|----|----|
| MICA*021      | 34                         |    |    |    |
| MICA*022      | 6                          | 23 | 13 |    |
| MICA*023      | 6                          | 17 |    |    |
| MICA*024      | 35                         | 10 | 11 | 36 |
| MICA*025      | 35                         | 16 |    |    |
| MICA*026      | 7                          | 37 |    |    |
| MICA*027      | 38                         | 32 |    |    |
| MICA*028      | 27                         | 17 |    |    |
| MICA*029      | 39                         |    |    |    |
| MICA*030      | 40                         |    |    |    |
| MICA*031      | 35                         |    |    |    |
| MICA*032      | 25                         | 41 | 8  |    |
| MICA*033      | 42                         |    |    |    |
| MICA*034      | 43                         | 12 |    |    |
| MICA*035      | 6                          | 38 |    |    |
| MICA*036      | 44                         |    |    |    |
| MICA*037      | 38                         |    |    |    |
| MICA*038      | 36                         |    |    |    |
| MICA*039      | 30                         |    |    |    |
| MICA*040      | 15                         |    |    |    |
| MICA*041      | 45                         | 5  |    |    |
| MICA*042      | 18                         |    |    |    |
| MICA*043      | 46                         |    |    |    |
| MICA*044      | 6                          | 8  | 12 |    |
| MICA*045      | 47                         |    |    |    |
| MICA*046      | 48                         |    |    |    |
| MICA*047      | 45                         | 40 |    |    |
| MICA*048      | 49                         |    |    |    |
| MICA*049      | 50                         |    |    |    |

The present invention is not limited to the above embodiments and various changes and modifications can be made within the spirit and scope of the present invention. Therefore, to apprise the 5 public of the scope of the present invention, the following claims are made.

This application claims priority from Japanese  
10 Patent Application Nos. 2003-430553 filed on December  
25, 2003, 2003-430554 filed on December 25, 2003,  
2003-430555 filed on December 25, 2003, 2003-430556  
filed on December 25, 2003, 2003-430557 filed on  
December 25, 2003, 2003-430558 filed on December 25,  
15 2003 and 2003-430559 filed on December 25, 2003,  
which are hereby incorporated by reference herein.

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